

APPROVED CONSTRUCTION PLAN NAME DATE PLANNING

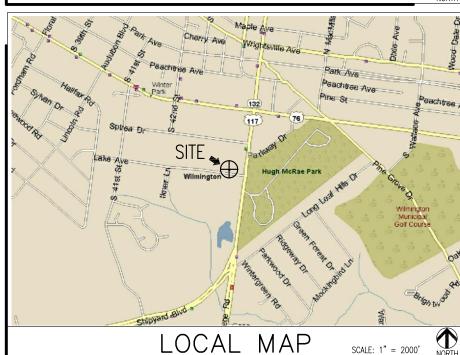


Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED

ATC SITE NUMBER: 275164

MAC RAE PARK NC





DIRECTIONS TO SITE:
DEPART 496 LONG POINT RD. MT PLEASANT, SC 29464 ON LONG POINT RD (EAST) 3.5 MI. TURN LEFT (NORTH-EAST) ONTO US-17 [US-701] 50.3 MI. KEEP RIGHT ONTO LOCAL ROAD(S) 32 YDS. BEAR LEFT (NORTH) ONTO LOCAL ROAD(S) 54 YDS. BEAR RIGHT (EAST) ONTO US-17 [CHURCH ST] 34.8 MI. TAKE RAMP ONTO US-501 [EDWARD E BURROUGHS HWY] 2.5 MI. KEEP RIGHT ONTO RAMP 0.5 MI. TAKE RAMP ONTO SR-31 [CAROLINA BAYS PKWY] 19.5 MI. TAKE RAMP (RIGHT) ONTO SR-91.8 MI. TURN OFF ONTO RAMP 0.3 MI. TURN LEFT (EAST) ONTO SR-90 0.8 MI. MERGE ONTO US-17 47.5 MI. (ENTERING NORTH CAROLÍNA) TAKE RAMP (RIGHT) ONTO US-17 [US-74] 2.9 MI. ROAD NAME CHANGES TO US-17 BUS [US-76] 1.5 MI. KEEP STRAIGHT ONTO US-76 [DAWSON ST] 1.2 MI. BEAR RIGHT (SOUTH-EAST) ONTO US-76 [OLEANDER DR] 2.4 MI. TURN RIGHT (SOUTH) ONTO US-117 [SR-132] 0.3 MI. TURN RIGHT (WEST) ONTO LAKE AVE 120 YDS. TURN RIGHT (NORTH) ONTO LOCAL ROAD(S) 32 YDS. ARRIVE AT SITE.

AMERICAN TOWER®

CORPORATION

AT&T SITE NUMBER:

478-104



PROPOSED STEALTH UNIPOLE & WIRELESS TELECOMMUNICATIONS FACILITY

DIG ALERT:

CALL 811 FOR UNDERGROUND UTILITIES PRIOR TO DIGGING OR (800) 632-4949

EMERGENCY:

APPROVAL	CALL 911					
OWNER'S AGENT APPROVAL	SIGNATURE	PHONE NUMBER	DATE	$\overline{\mathbb{S}}$		
ATC CONSTRUCTION COORDINATOR	SIGNATURE	PHONE NUMBER	DATE			
ATC APPROVAL	SIGNATURE	PHONE NUMBER	DATE	_ ŭ		

SET NO.	DESCRIPTION	BY	DATE	SET NO.	DESCRIPTION	BY	DATE	
1	CITY CHANGES	AGT	04-24-14	5				نا
2	CITY COMMENTS	_DS	06-24-14	66				_
3	CITY CHANGES	_DS	06-26-14	7				╽┕
4				8				

NEERING FI	RM:
LC 200 68	
CONTACT:	CHRIS MORIN
CONTACT:	RONALD D. PLATNER
LC 101 68	
CONTACT:	CHRIS MORIN
ENERGY	
	LC CONTACT: CONTACT: CONTACT: LC O1 68 CONTACT:

CONSULTING TEAM

PROPERTY OWNER: SITE NAME: AT&T CLEC BUILDING MAC RAE PARK NC 1642 S COLLEGE RD WILMINGTON, NC 28409 SITE NUMBER: CONTACT: -275164 TEL: -SITE ADDRESS: ATC - AGENT 4417 LAKE AVE. WILMINGTON, NC 28409 NEXSEN PRUFT PLLC 4141 PARK LAKE AVE. STE. 200 RALEIGH, NC 27612 APPLICANT BUILDING INFO: AMERICAN TOWER CORP. TEL: (919) 786-2764 496 LONG POINT ROAD MOUNT PLEASANT, SC 29464 TEL: (843) 971-8385 FAX: (843) 971-8889 CONTACT: JASON GROSECLOSE TEL: (843) 224-3778 PROJECT DESCRIPTION: AN UNMANNED RADIO TELECOMMUNICATIONS FACILITY CONSISTING OF A 150 FT. STEALTH UNIPOLE IN A 10'x10' LEASE AREA ADA COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION PROJECT DATA: CAMA LAND USE CLASS: URBAN TAX PARCEL NO: RO6107 CITY OF WILMINGTON 10'x10' (100 S.F.) JURISDICTION: LEASE AREA: ZONING: GEOGRAPHIC COORDINATES: 1A GROUND ELEVATION: 40.9' AMSL CODE COMPLIANCE 2012 NCRC 2009 IBC W/ NC AMENDMENTS PROJECT SUMMARY

TITLE SHEET, VICINITY MAP AND GENERAL INFORMATION NP-1 SITE PLAN WITH NEIGHBORING PROPERTY INFORMATION STIE PLAN
ENLARGED SITE PLAN
TOWER ELEVATION
FENCE, GATE AND COMPOUND CROSS SECTION
SHELITER LAYOUT & ELEVATIONS
SHELITER DETAILS
ICEBRIDGE DETAILS
ANTENNA DETAILS
WOOD ESCAPE CETAINS SITE PLAN ΔΔ EROSION & SEDIMENT CONTROL PLAN SILT FENCE DETAILS & NOTES TREE REMOVAL & LANDSCAPE PLAN LANDSCAPING NOTES & PROTECTION DETAILS UTILITY & GROUNDING PLAN ENLARGED GROUNDING PLAN AT&T ELECTRICAL DETAILS AT&T PANELBOARD SCHEDULE AT&T FLECTRICAL DETAILS AT&T ELECTRICAL DETAILS
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ELECTRICAL NOTES GEN-1 50KW GENERATOR DETAILS GEN-1 50KW GENERATOR DETAILS GEN-2 50KW GENERATOR DETAILS GEN-3 50KW GENERATOR DETAILS GEN-4 50KW GENERATOR DETAILS SP-1 SPECIFICATIONS SP-2 SPECIFICATIONS SHEET INDEX

SHEET NUMBER: DESCRIPTION:



496 LONG POINT ROAD MOUNT PLEASANT, SC 29464 TEL.: (843) 971–8385 FAX: (843) 971–8889

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OF SERVICE, ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER CORPORATION AND THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. REUSE, DESCRIPTION OF DEPENDANCE AND METHOD REPORTED AND METHOD REPOR REPRODUCTION OR PUBLICATION BY ANY METHOI IN WHOLE OR IN PART, IS PROHIBITED EXCEPT WRITTEN PERMISSION FROM AMERICAN TOWER CORPORATION TITLE TO THESE PLANS AND/OR SPECIFICATIONS SHALL REMAIN WITH AMERICAN TOWER CORPORATION WITHOUT PREJUDICE AND VISUAL CONTACT WITH THEM SHALL CONSTITUTE PRIMA FACIE EVIDENCE OF ACCEPTANCE OF THES RESTRICTIONS.



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5661 COLUMBIA PIKE SUITE 200 FALLS CHURCH, VA 22041–2868 TEL: (703) 671–6000 FAX: (703) 671-6300

SHEET REVISION

DESCRIPTION BY DATE

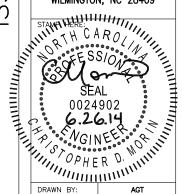
NEW SHEETS AGT 04-24-14 CITY COMMENTS DS 06-24-14 NEW SHEET DS 06-26-14

ATC SITE NUMBER:

275164 ATC SITE NAME:

MAC RAE PARK NC

SITE ADDRESS: 4417 LAKE AVE. WILMINGTON, NC 28409



CHECKED BY: DATE DRAWN: SUBMISSION: FINAL CD'S

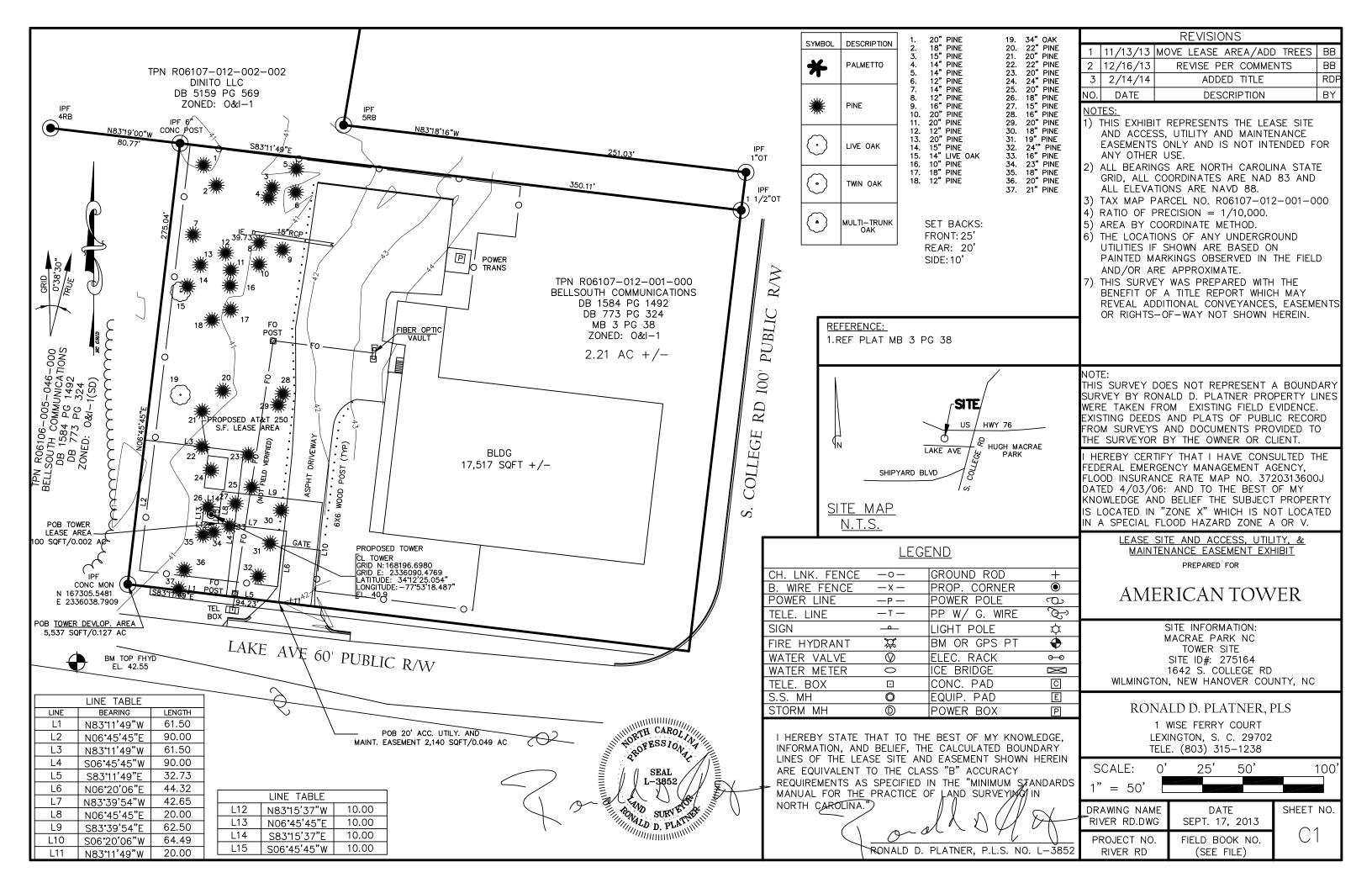
SHEET TITLE:

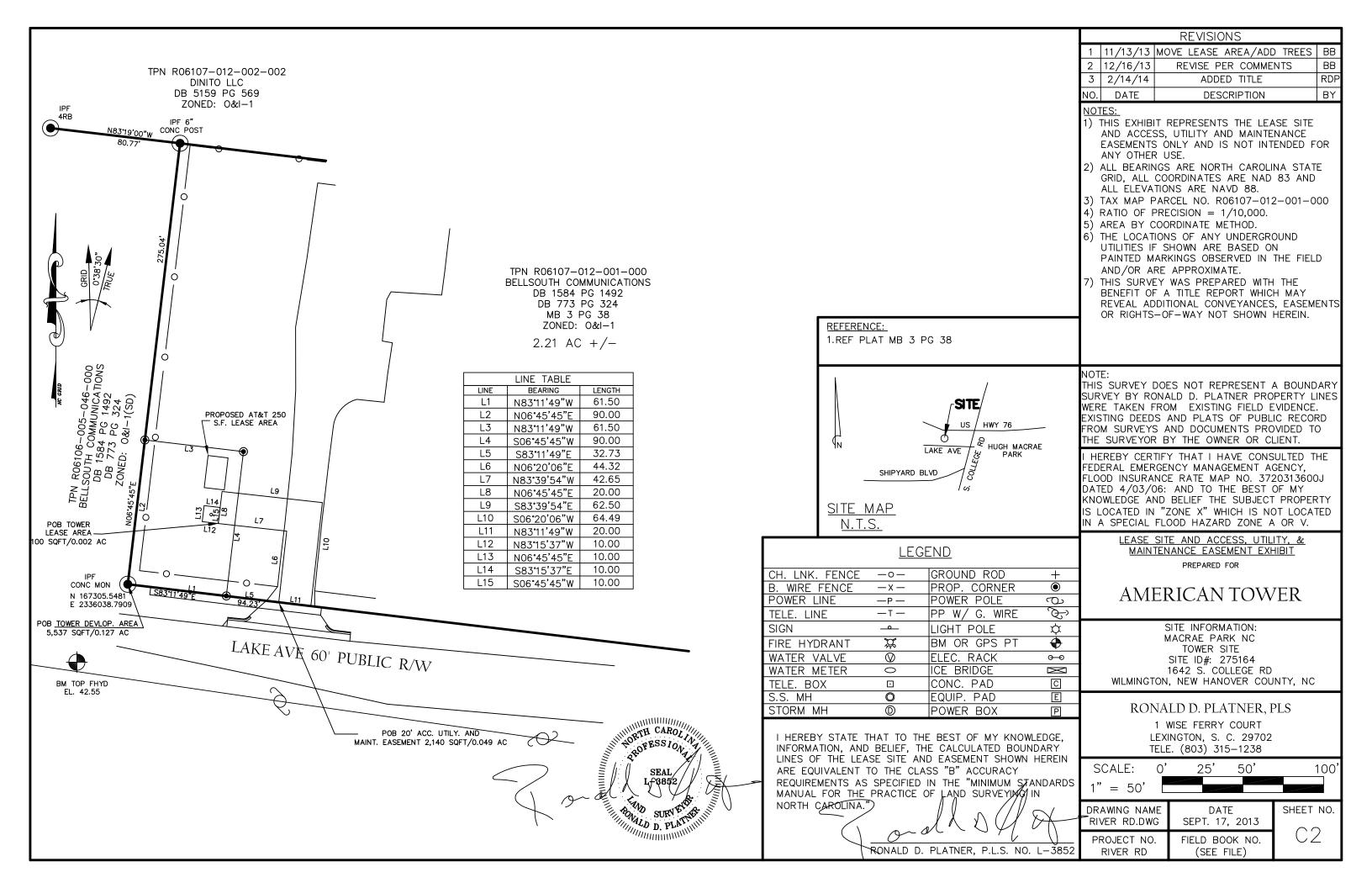
TITLE SHEET, VICINITY MAP AND GENERAL INFORMATION

SHEET NUMBER:

T-1

REV. #





20' ACCESS, UTILITY, AND MAINTENANCE EASEMENT

BEGINNING AT A CONCRETE MONUMENT AT THE SOUTHWESTERN MOST CORNER OF TAX PARCEL NUMBER R06107-012-001-000 AND THE RIGHT OF WAY OF LAKE AVENUE WITH STATE PLANE COORDINATES N167305.5481 E2336038.7909. THENCE S83"11'49"E FOR A DISTANCE OF 94.23 ALONG THE RIGHT OF WAY OF LAKE AVENUE TO A POINT, SAID POINT BEING THE POINT OF BEGINNING FOR THE ACCESS, UTILITY, AND MAINTENANCE EASEMENT, THENCE N06'20'06"E FOR A DISTANCE OF 44.32 TO A POINT, THENCE N83'39'54"W FOR A DISTANCE OF 42.65 TO A POINT, THENCE NO6'45'45"E FOR A DISTANCE OF 20.00 TO A POINT, THENCE S83'39'54"E FOR A DISTANCE OF 62.50 TO A POINT, THENCE S06'20'06"W FOR A DISTANCE OF 64.49 TO A POINT, THENCE N83"1'49"W FOR A DISTANCE OF 20.00 TO A POINT, SAID POINT BEING THE POINT OF BEGINNING FOR THE ACCESS, UTILITY, AND MAINTENANCE EASEMENT CONTAINING 2,140 SQFT/0.049 AC.

TOWER DEVELOPMENT AREA

BEGINNING AT A CONCRETE MONUMENT AT THE SOUTHWESTERN MOST CORNER OF TAX PARCEL NUMBER R06107-012-001-000 AND THE RIGHT OF WAY OF LAKE AVENUE WITH STATE PLANE COORDINATES N167305.5481 E2336038.7909, SAID POINT BEING THE POINT OF BEGINNING FOR THE TOWER DEVELOPMENT AREA, THENCE N06'45'45"E FOR A DISTANCE OF 90.00 TO A POINT, THENCE S83"11'49"E FOR A DISTANCE OF 61.50 TO A POINT, THENCE S06"45"45"W FOR A DISTANCE OF 90.00 TO A POINT, THENCE N83"11'49"W FOR A DISTANCE OF 61.50 TO A POINT, SAID POINT BEING THE POINT OF BEGINNING FOR THE TOWER DEVELOPMENT AREA CONTAINING 5,537 SQFT/0.127 AC.

TOWER LEASE AREA

BEGINNING AT A CONCRETE MONUMENT AT THE SOUTHWESTERN MOST CORNER OF TAX PARCEL NUMBER R06107-012-001-000 AND THE RIGHT OF WAY OF LAKE AVENUE WITH STATE PLANE COORDINATES N167305.5481 E2336038.7909, THENCE S83"11'49"E FOR A DISTANCE OF 94.23 ALONG THE RIGHT OF WAY OF LAKE AVENUE TO A POINT, THENCE N06"20'06"E FOR A DISTANCE OF 44.32 TO A POINT, THENCE N83'39'54"W FOR A DISTANCE OF 42.65 TO A POINT, SAID POINT BEING THE POINT OF BEGINNING FOR THE TOWER LEASE AREA, THENCE N83'15'37"W FOR A DISTANCE OF 10.00 TO A POINT, THENCE NO6'45'45"E FOR A DISTANCE OF 10.00 TO A POINT, THENCE S83"15'37"E FOR A DISTANCE OF 10.00 TO A POINT, THENCE S06'45'45"W FOR A DISTANCE OF 10.00 TO A POINT, SAID POINT BEING THE POINT OF BEGINNING FOR THE TOWER LEASE AREA CONTAINING 100 SQFT/0.002 AC.

SCHEDULE A Commitment 01-14004827-01T

1. Commitment Effective Date: 01/15/2014 at 7:00 AM

SITUATED IN THE COUNTY OF NEW HANOVER AND STATE OF NORTH CAROLINA AND DESCRIBED AS FOLLOWS:

PARENT PARCEL: BEGINNING AT A POINT IN THE WESTERN RIGHT OF WAY LINE OF N.C. HIGHWAY #132 WHERE SAID WESTERN RIGHT OF WAY LINE IS INTERSECTED BY AN EXTENSION OF THE NORTHERLY LINE OF LAKE AVENUE AS SAID LAKE AVENUE IS SHOWN ON A MAP OF WINTER PARK GARDENS RECORDED IN MAP BOOK 3, PAGE 38, OF THE NEW HANOVER COUNTY REGISTRY; RUNNING THENCE IN A WESTERLY DIRECTION AND WITH AND ALONG SAID EXTENDED LINE OF LAKE AVENUE 350 FEET TO A POINT; THENCE IN A NORTHERLY DIRECTION AND PARALLEL WITH THE WESTERLY RIGHT OF WAY OF N.C. HIGHWAY 132, 275 FEET TO A POINT; THENCE EASTWARDLY AND PARALLEL WITH EXTENDED NORTHERLY LINE OF LAKE AVENGE 350 FEET TO A POINT IN THE WESTERN RIGHT OF WAY LINE OF N.C. HIGHWAY 132; THENCE SOUTHWARDLY WITH AND ALONG SAID WESTERN RIGHT AWAY LINE OF N.C. HIGHWAY 132, 275 FEET TO THE POINT OF BEGINNING.

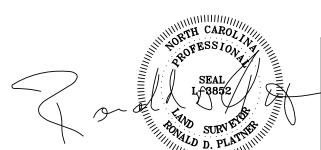
TAX I.D. NUMBER: R06107-012-001-000

END OF SCHEDULE A

SCHEDULE B - SECTION II

EXCEPTIONS
ANY POLICY WE ISSUE WILL HAVE THE FOLLOWING EXCEPTIONS UNLESS THEY ARE TAKEN CARE OF TO OUR SATISFACTION

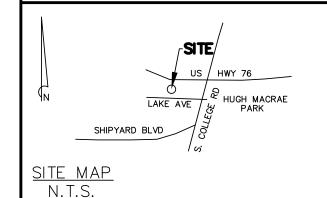
- (1) FACTS WHICH WOULD BE DISCLOSED BY A COMPREHENSIVE SURVEY OF THE PREMISES HÉREIN DESCRIBED. AS SHOWN ON SURVEY
- (2) RIGHTS OR CLAIMS OF PARTIES IN POSSESSION OR RIGHTS OF TENANTS IN POSSESSION AS TENANTS ONLY UNDER UNRECORDED LEASES. AS SHOWN ON SURVEY (3) MECHANICS', CONTRACTORS' OR MATERIAL MEN'S LIENS AND LIEN CLAIMS, IF ANY,
- WHERE NO NOTICE THEREOF APPEARS OF RECORD. NOT A SURVEY ISSUE (4) ANY CHANGES IN TITLE OCCURRING SUBSEQUENT TO THE EFFECTIVE DATE OF THIS COMMITMENT AND PRIOR TO THE DATE OF ISSUANCE OF THE TITLE POLICY. NOT A SURVEY ISSUE
- (5) TAXES AND SPECIAL ASSESSMENTS FOR CURRENT TAX YEAR DUE AND ALL SUBSEQUENT ÝÉARS. NOT A SURVEY ISSUE
- (6) SUBJECT TO COVENANTS, RESTRICTIONS, RESERVATIONS, EASEMENTS, AND RIGHTS OF WAY AND BUILDING SETBACKS AS SHOWN ON THE PLAT RECORDED IN BOOK 3, PAGE 38 OF NE W HANOVER COUNTY RECORDS. AS SHOWN ON SURVEY END OF SCHEDULE B-II



	REVISIONS							
1	11/13/13	MOVE LEASE AREA/ADD TREES	BB					
2	12/16/13	REVISE PER COMMENTS	BB					
3	2/14/14	ADDED TITLE	RDP					
NO.	DATE	DESCRIPTION	BY					

- 1) THIS EXHIBIT REPRESENTS THE LEASE SITE AND ACCESS. UTILITY AND MAINTENANCE EASEMENTS ONLY AND IS NOT INTENDED FOR ANY OTHER USE.
- 2) ALL BEARINGS ARE NORTH CAROLINA STATE GRID, ALL COORDINATES ARE NAD 83 AND ALL ELEVATIONS ARE NAVD 88.
- 3) TAX MAP PARCEL NO. R06107-012-001-000
- 4) RATIO OF PRECISION = 1/10,000.
- AREA BY COORDINATE METHOD.
- 6) THE LOCATIONS OF ANY UNDERGROUND UTILITIES IF SHOWN ARE BASED ON PAINTED MARKINGS OBSERVED IN THE FIELD AND/OR ARE APPROXIMATE.
- 7) THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE REPORT WHICH MAY REVEAL ADDITIONAL CONVEYANCES, EASEMENTS OR RIGHTS-OF-WAY NOT SHOWN HEREIN.

REFERENCE: 1.REF PLAT MB 3 PG 38



LEGEND

GROUND ROD

POWER POLE

LIGHT POLE

ELEC. RACK

ICE BRIDGE

CONC. PAD

EQUIP. PAD

POWER BOX

RONALD D. PLATNER, P.L.S. NO. L-3852

PROP. CORNER

PP W/ G. WIRE

BM OR GPS PT

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CH. LNK. FENCE

B. WIRE FENCE

FIRE HYDRANT

WATER VALVE

WATER METER

TELE. BOX

STORM MH

S.S. MH

POWER LINE

TELE. LINE

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THIS SURVEY DOES NOT REPRESENT A BOUNDARY SURVEY BY RONALD D. PLATNER PROPERTY LINES WERE TAKEN FROM EXISTING FIELD EVIDENCE. EXISTING DEEDS AND PLATS OF PUBLIC RECORD FROM SURVEYS AND DOCUMENTS PROVIDED TO THE SURVEYOR BY THE OWNER OR CLIENT.

HEREBY CERTIFY THAT I HAVE CONSULTED THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP NO. 3720313600J DATED 4/03/06: AND TO THE BEST OF MY KNOWLEDGE AND BELIEF THE SUBJECT PROPERTY IS LOCATED IN "ZONE X" WHICH IS NOT LOCATED IN A SPECIAL FLOOD HAZARD ZONE A OR V.

> LEASE SITE AND ACCESS, UTILITY, & MAINTENANCE EASEMENT EXHIBIT

> > PREPARED FOR

AMERICAN TOWER

SITE INFORMATION: MACRAE PARK NC TOWER SITE SITE ID#: 275164 1642 S. COLLEGE RD WILMINGTON, NEW HANOVER COUNTY, NC

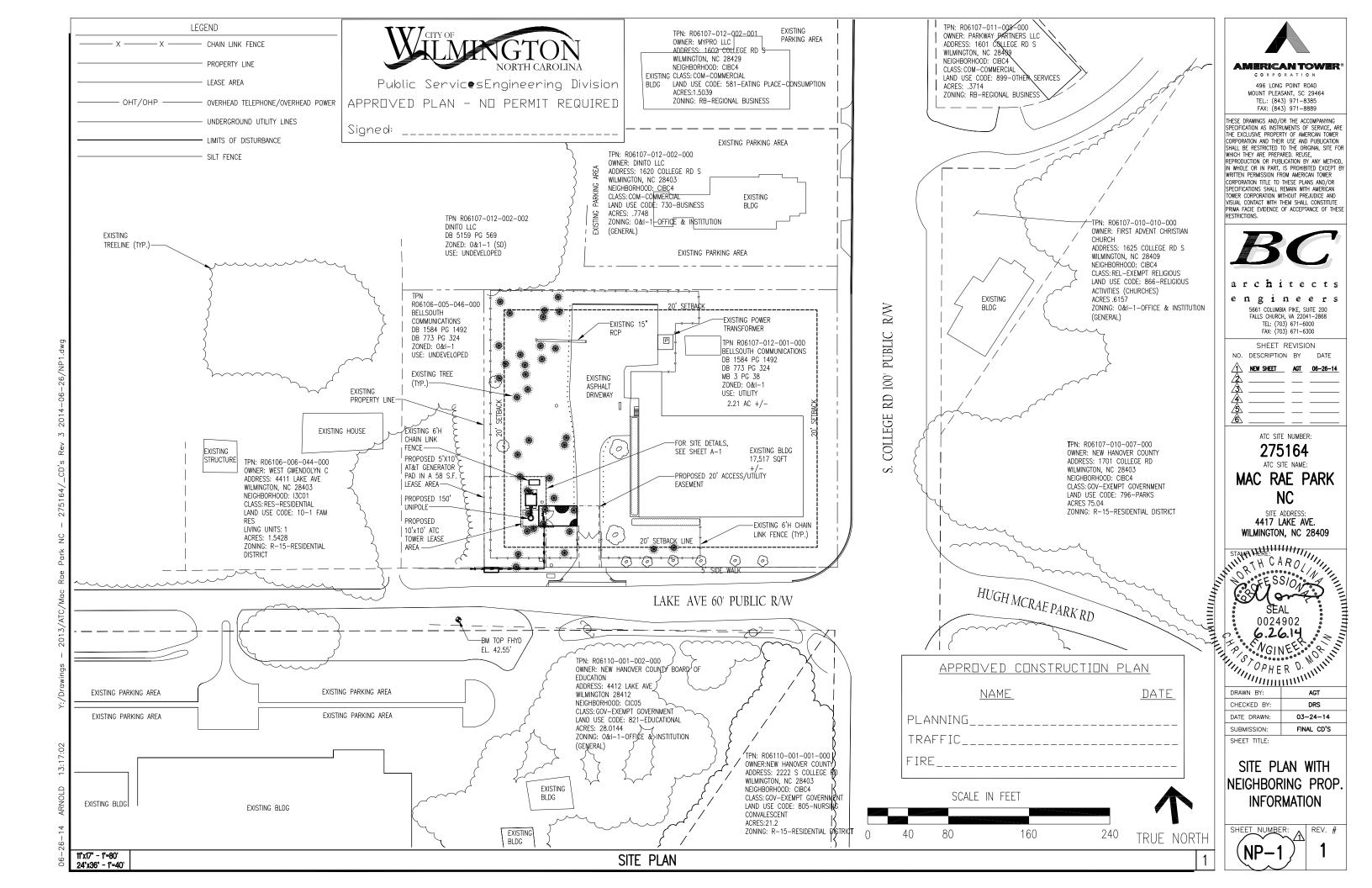
RONALD D. PLATNER, PLS

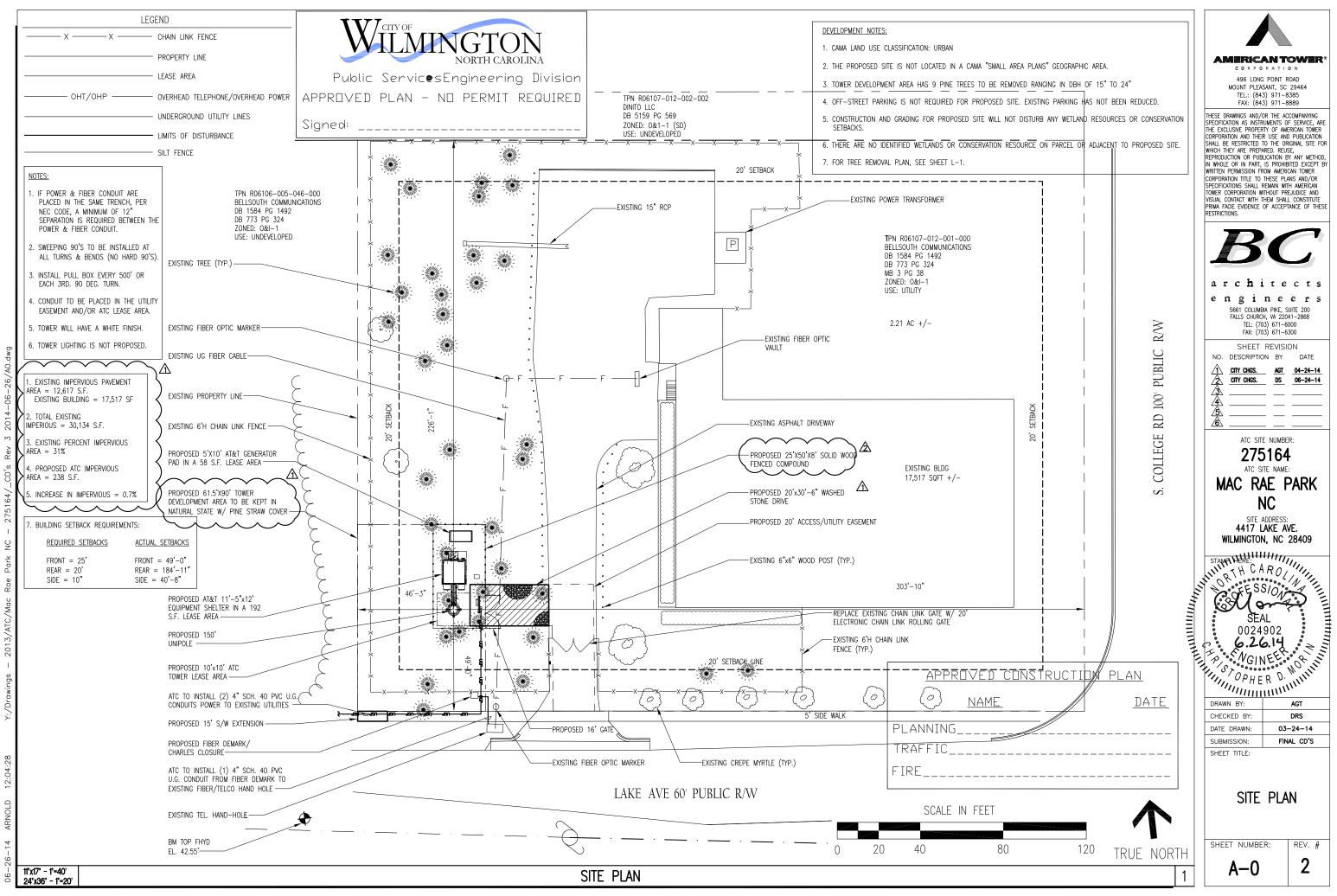
1 WISE FERRY COURT LEXINGTON, S. C. 29702 TELE. (803) 315-1238

SCALE:	0'	25'	50'	100'
1" = 50'				

DRAWING NAME RIVER RD.DWG	DATE SEPT. 17, 2013	SHEET NO.
PROJECT NO.	FIELD BOOK NO.	C3

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE. INFORMATION, AND BELIEF, THE CALCULATED BOUNDARY LINES OF THE LEASE SITE AND EASEMENT SHOWN HEREIN ARE EQUIVALENT TO THE CLASS "B" ACCURACY REQUIREMENTS AS SPECIFIED IN THE "MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN NORTH CAROLINA."





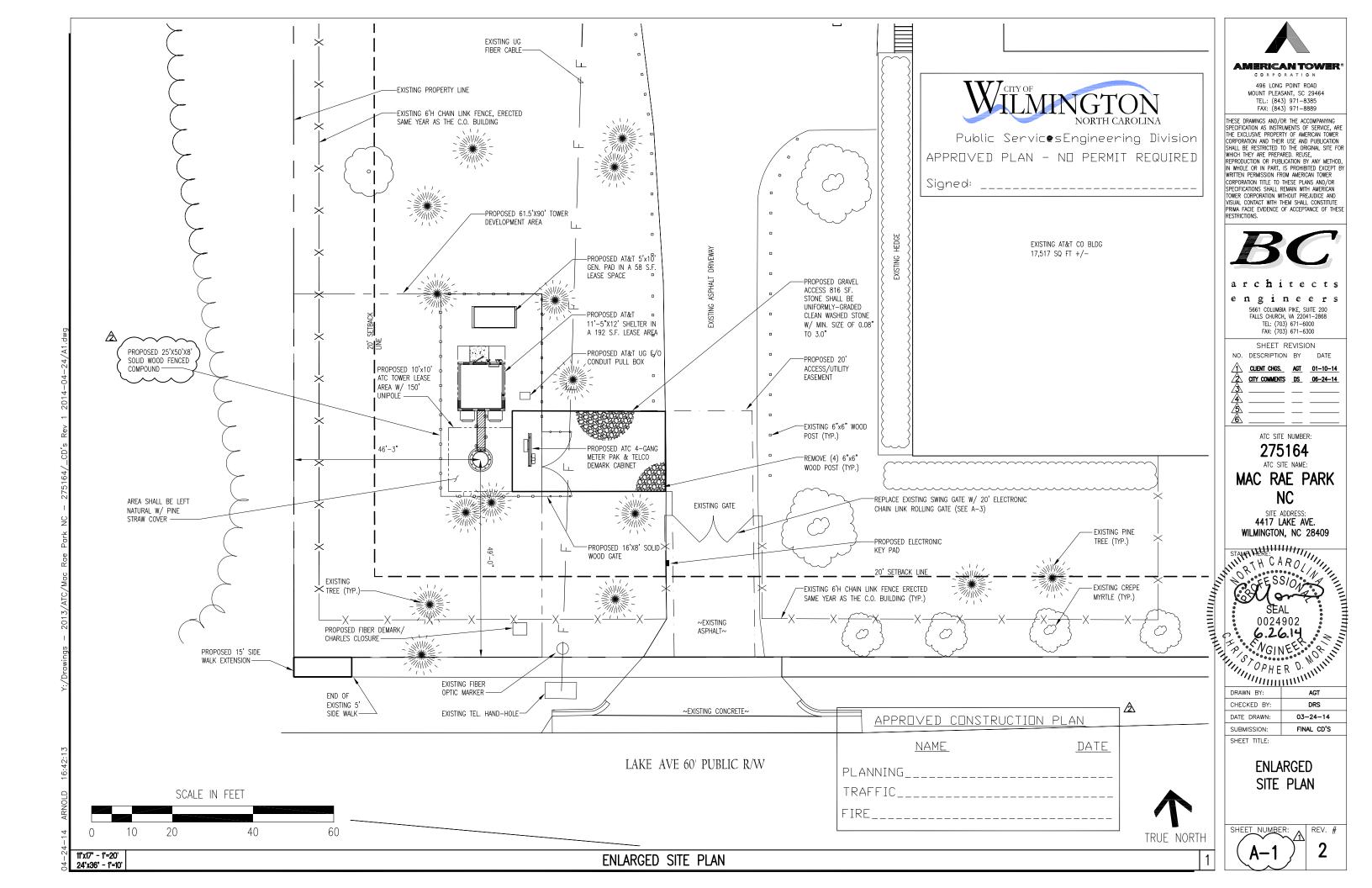
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	CITY CHGS.	AGT DS	04-24-14 06-24-14
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DRAWN BY:	AGT
CHECKED BY:	DRS
DATE DRAWN:	03-24-14
SUBMISSION:	FINAL CD'S



NOTES:

G.C. SHALL TEST AND DOCUMENT THAT THE TOWER LIGHTING SYSTEMS ARE FUNCTIONING PROPERLY DURING & UPON COMPLETION OF EQUIPMENT

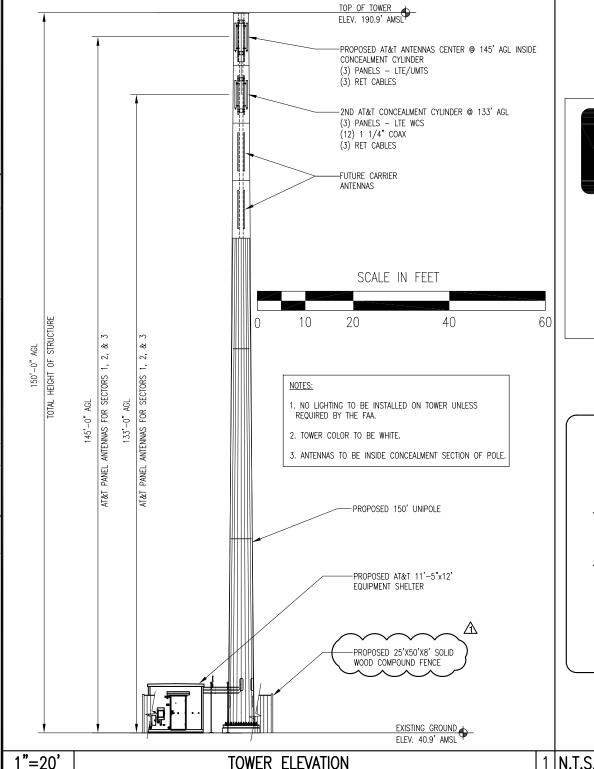
G.C. WILL PERFORM TWO HEIGHT VERIFICATIONS ON AT&T PROVIDED FORMS AS FOLLOWS:

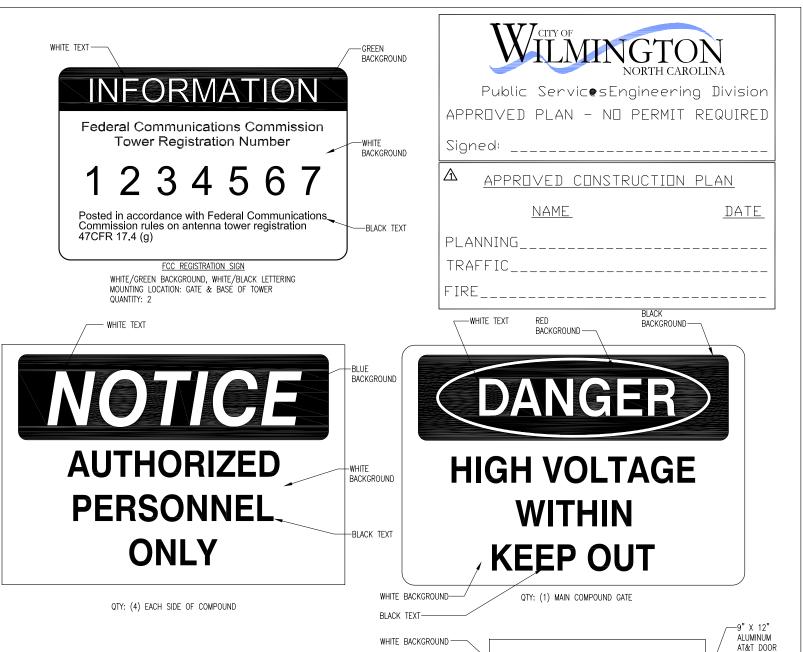
TAPE DROP #1 SHALL BE SUBMITTED TO THE APPROPRIATE AT&T TOWER CONSTRUCTION MANAGER WITHIN (24) HOURS UPON COMPLETION OF THE TOWER ERECTION AND WILL DOCUMENT THE DIMENSION FROM THE GROUND TO HIGHEST POINT ON THE TOWER (I.E.: LIGHTNING ROD)

TAPE DROP #2 SHALL BE PERFORMED AND SUBMITTED TO THE APPROPRIATE AT&T CONSTRUCTION MANAGER WITHIN (72) HOURS UPON COMPLETION OF THE ANTENNA AND LINE INSTALLATION. THIS FORM WILL ACCOMPANY THE SWEEP TEST REPORTS AND WILL DOCUMENT THE DIMENSION FROM THE

IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INVENTORY THE TOWER MATERIALS UPON DELIVERY TO THE SITE. A BILL OF MATERIAL, (PACKING LIST(S) WILL BE INCLUDED WITH THE SHIPMENT. IF THIS LIST OR LISTS ARE NOT INCLUDED, PLEASE NOTIFY THE AT&T PROJECT MANAGER IMMEDIATELY. FAILURE TO REPORT MATERIAL SHORTAGES OR DAMAGED GOODS WITHIN 48 HOURS OF RECEIPT WILL INDICATE THE G.C. HAS ACCEPTED ALL MATERIAL IN GOOD CONDITION AND ALL IS ACCOUNTED FOR.

ANY MATERIAL SHORTAGES OR DAMAGES REPORTED AFTER 48 HOURS WILL AT THAT POINT BE THE RESPONSIBILITY OF THE G.C. TO HAVE CORRECTED BY THE TOWER VENDOR AT HIS/HER EXPENSE.





AMERICAN TOWER SITE NAME:

SITE NUMBER:

FOR LEASING INFORMATION 877-282-7483 877-ATC-SITE

FCC REGISTRATION NUMBER:

IN CASE OF EMERGENCY: 877-518-6937 877-51-TOWER

NO TRESPASSING

www.americantower.com POSTING OF THIS SIGN REQUIRED BY LAW

OWNER CONTACT SIGN

WHITE BACKGROUND, BLACK/RED LETTERING MOUNTING LOCATION: GATE QUANTITY: 1





Authorized Personnel Only

In case of emergency, or prior to performing maintenance on this site, call (800) 298-3551 and reference cell site number__478-104_

AT&T DOOR SIGN

1. SIGN CAN BE OBTAINED FROM ST. CLAIR SIGNS, INC. 3184 WADE HAMPTON BLVD. TAYLORS, SC 29687 (864) 244-0044

AMERICAN TOWER

496 LONG POINT ROAD MOUNT PLEASANT, SC 29464 TEL.: (843) 971–8385 FAX: (843) 971–8889

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engineers 5661 COLUMBIA PIKE, SUITE 200 TEL: (703) 671-6000

FAX: (703) 671-6300 SHEET REVISION

ATC SITE NUMBER:

275164 ATC SITE NAME:

MAC RAE PARK

SITE ADDRESS: 4417 LAKE AVE. WILMINGTON, NC 28409



DRAWN BY:	AGT
CHECKED BY:	DRS
DATE DRAWN:	03-24-14
SUBMISSION:	FINAL CD'S

SHEET TITLE:

TOWER ELEVATION & SIGNAGE **SPECIFICATIONS**

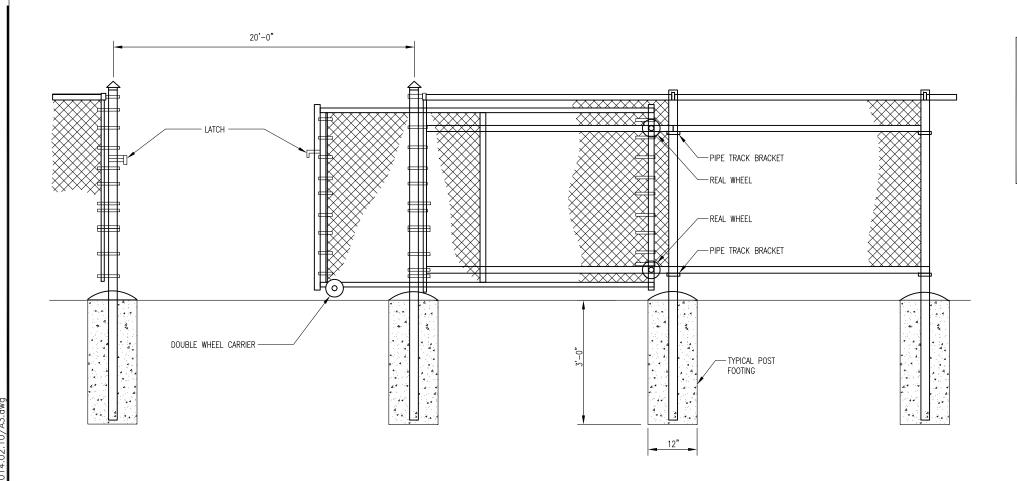
SHEET NUMBER: REV. #

A-2

SIGNAGE SPECIFICATIONS

GREEN

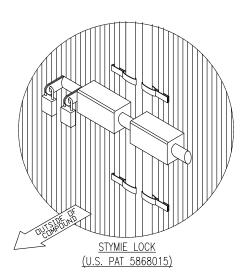
BACKGROUND -





Public ServicesEngineering Division APPROVED PLAN - NO PERMIT REQUIRED

Signed: _____



STORE EXTRA PARTS OF MULTI-LOCK DEVICE IN TELCO CABINET.

NO PLUNGER OR MUSHROOM REQUIRED.

APPROVED CONSTRUCTION	N PLAN
<u>NAME</u>	DATE
PLANNING	
TRAFFIC	
FIRE	

(OR APPROVED EQUAL)

HOOVER FENCE 5531 MCCLINTOCKSBURG RD NEWTOWN FALLS, OH. 44444 1 (800) 355-2335

REFERENCE NOTES:

- (1) CORNER, END OR PULL POST: 3" NOMINAL SCHEDULE 40 PIPE.
- (2) LINE POST: 2 1/2" SCHEDULE 40 PIPE, PER ASTM-F1083. LINE POSTS SHALL BE EQUALLY SPACED AT MAXIMUM OF 8'-0" O.C.
- 3 TOP RAIL & BRACE RAIL: 1 1/2" PIPE, PER ASTM-F1083.
- (4) FABRIC: 9 GA CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392.
- (5) GATE POST: CONCRETE FOUNDATION (3000 PSI).
- (6) TENSION WIRE: 9 GA. GALVANIZED STEEL.
- (7) FINISH GRADE SHALL BE UNIFORM AND LEVEL.
- 8 GATE POST: 4" SCHEDULE 40 PIPE, FOR GATE WIDTHS UP THRU 7 FEET OR 14 FEET FOR DOUBLE SWING GATE PER ASTM-F1083
- (9) 3/8" DIAGONAL ROD WITH GALVANIZED STEEL TURNBUCKLE OR DIAGONAL THREADED ROD.
- 10 FENCE CORNER POST BRACE: 1 5/8" DIA. EACH CORNER EACH WAY.

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ATC SITE NUMBER:

SHEET REVISION NO. DESCRIPTION BY I

AMERICAN TOWER

496 LONG POINT ROAD MOUNT PLEASANT, SC 29464 TEL.: (843) 971-8385 FAX: (843) 971-8889

275164 ATC SITE NAME:

MAC RAE PARK NC

SITE ADDRESS: 4417 LAKE AVE. WILMINGTON, NC 28409

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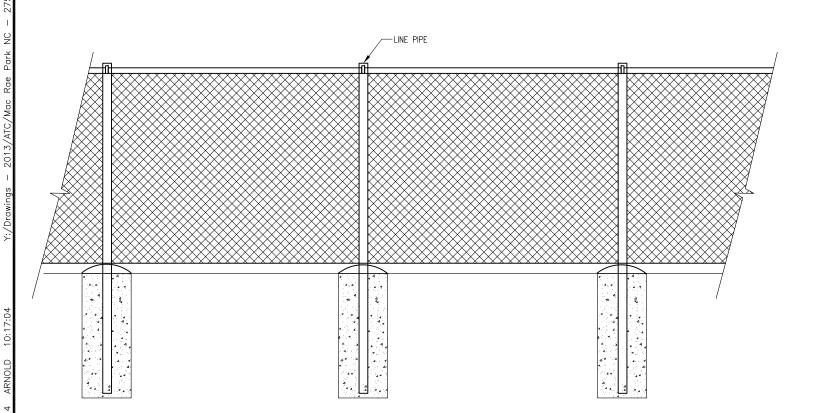
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FENCE, GATE AND COMPOUND CROSS SECTION DETAIL

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N.T.S.

11'-5"

ELEVATION

N.T.S.

12'-0"

ELEVATION

N.T.S.



AMERICAN TOWER

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FAX: (843) 971-8889

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SHEET REVISION

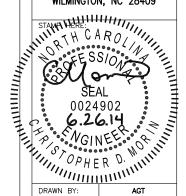
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275164 ATC SITE NAME:

MAC RAE PARK

SITE ADDRESS: 4417 LAKE AVE. WILMINGTON, NC 28409



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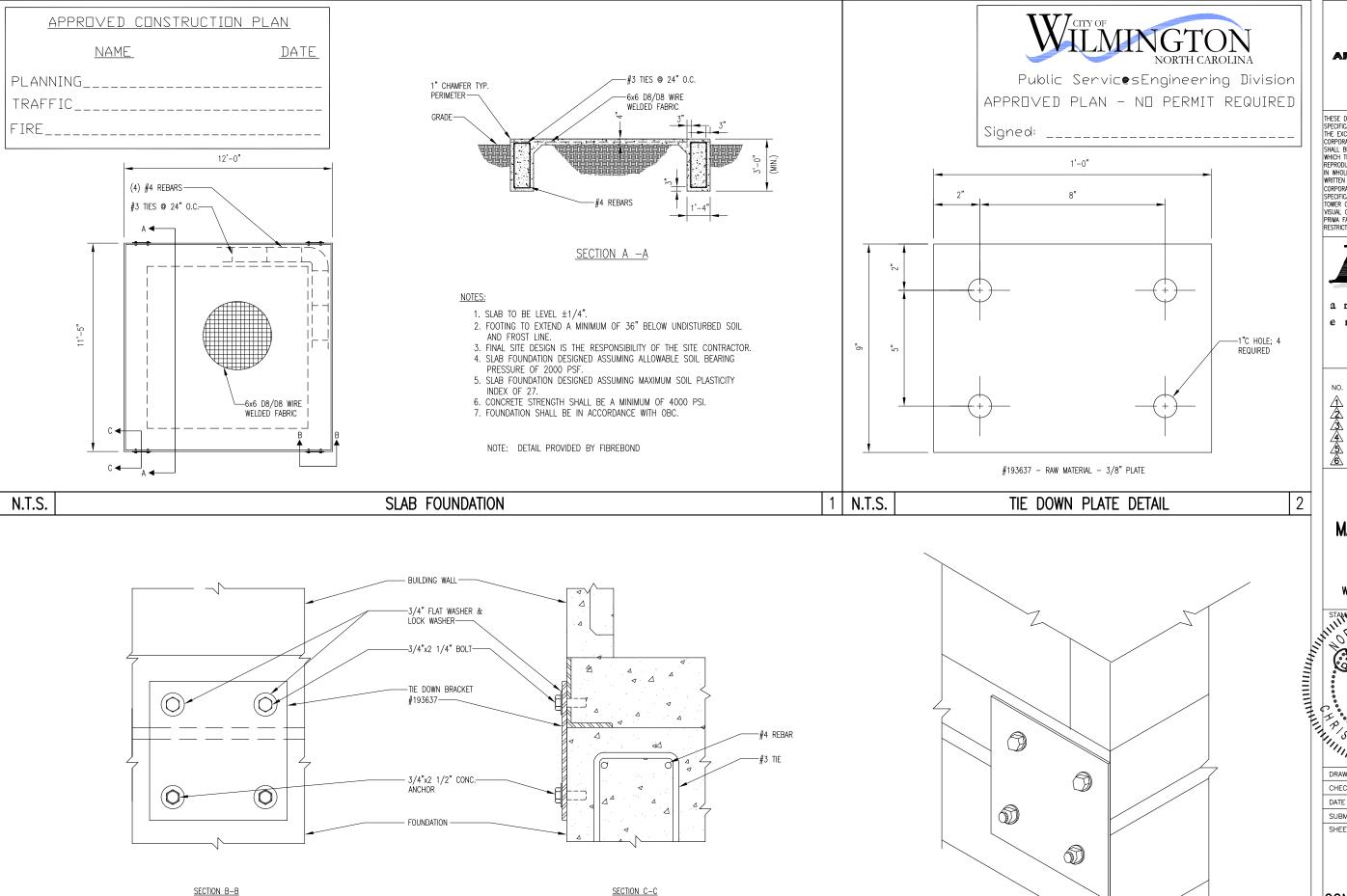
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MERICAN TOWE

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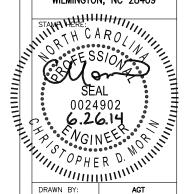
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275164 ATC SITE NAME:

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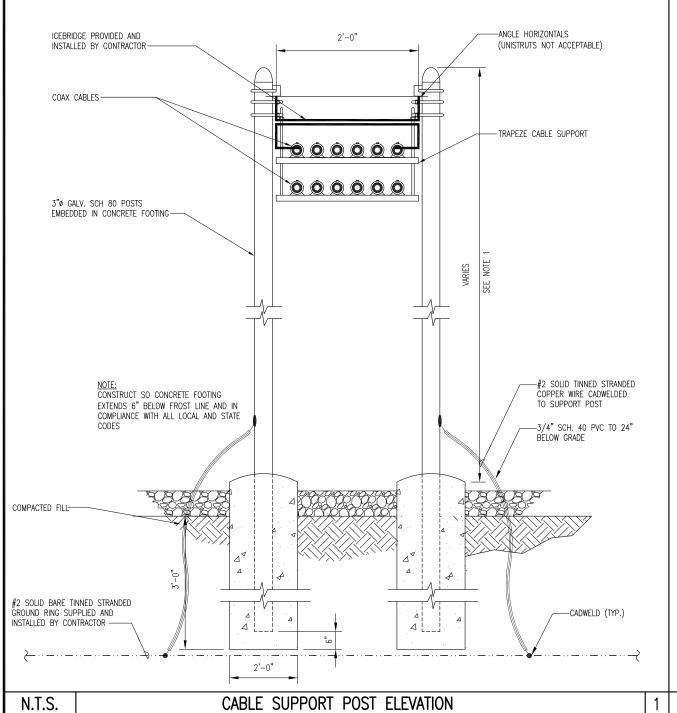
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NOTE: DETAIL PROVIDED BY FIBREBOND

NOTES:

- 1. DESIGN REQUIREMENTS ARE PER LOCAL BUILDING CODE/1994 ANSI/ASCE7, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES AND ALL APPLICABLE STATE AND LOCAL CODES. THE BASIC GROUND WIND SPEED UTILIZED FOR DESIGN IS 100 MPH.
- 2. REFER TO THE SITE PLAN PREPARED BY OTHERS FOR BOUNDARY SURVEY AND SITE TOPOGRAPHY
- 3. CONCRETE EQUIPMENT PAD SHALL BE PLACED OVER UNDISTURBED OR WELL COMPACTED SOIL, SEE NOTE 4.
- 4. EXISTING VEGETATION AND ORGANIC MATERIALS SHALL BE REMOVED FROM THE CONCRETE EQUIPMENT PAD AREAS. FILL SITE TO ORIGINAL ELEVATION WITH CLEAN SANDY SOIL. COMPACT TO OBTAIN 2500 PSF BEARING CAPACITY.
- 5. ALL THREADED STRUCTURAL FASTENERS FOR ANTENNA SUPPORT ASSEMBLIES SHALL CONFORM TO ASTM A325. FASTENERS SHALL BE 5/8" MINIMUM DIAMETER BEARING TYPE CONNECTIONS WITH THREADS INCLUDED IN THE SHEAR PLANE. ALL EXPOSED FASTENERS, NUTS AND WASHERS SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. CONCRETE EXPANSION ANCHORS SHALL BE HILTI KWIK BOLTS OR EQUIVALENT UNLESS OTHERWISE NOTED.
- 6. TRANSMITTER EQUIPMENT SHALL BE FURNISHED BY THE OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF OWNER PROVIDED HARDWARE IS ATTACHED TO BID DOCUMENTS (SEE ATTACHMENT E) ALL OTHER HARDWARE TO BE FURNISHED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
- 7. SUPPORT POSTS SHALL BE SPACED 4'-0" MAX.
- 8. CABLE SUPPORT SPACING SHALL BE 3'-0" MAX.
- 9. ICE BRIDGE SHALL BE GALVANIZED GRIP-STRUT.
- 10. CONTRACTOR SHALL FURNISH AND INSTALL ICE BRIDGE STRUCTURE.

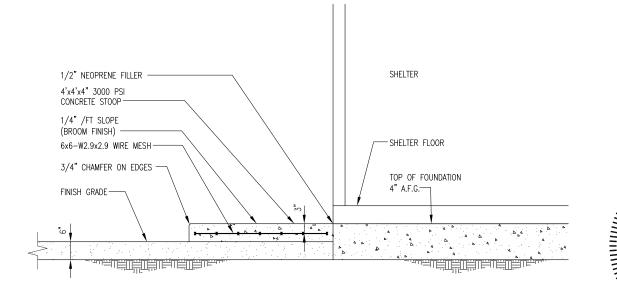




Public Service Engineering Division
APPROVED PLAN - NO PERMIT REQUIRED

Signed: _____

APPROVED CONSTRUCTION	PLAN
<u>NAME</u>	DATE
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275164 ATC SITE NAME:

MAC RAE PARK NC

SITE ADDRESS: 4417 LAKE AVE. WILMINGTON, NC 28409



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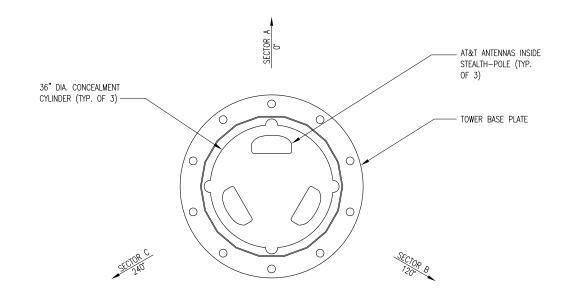
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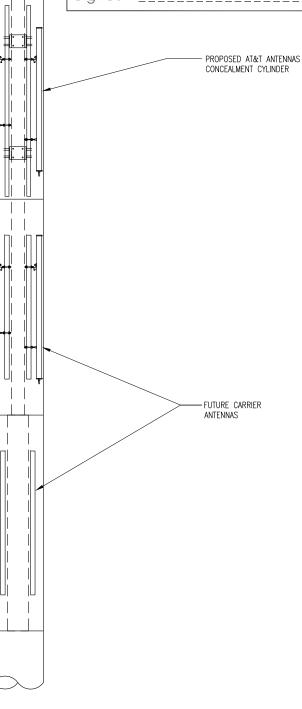
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APPROVED CONSTRUCTION PLAN NAME DATE PLANNING_____





Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED





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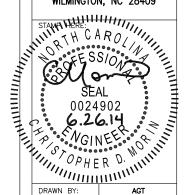
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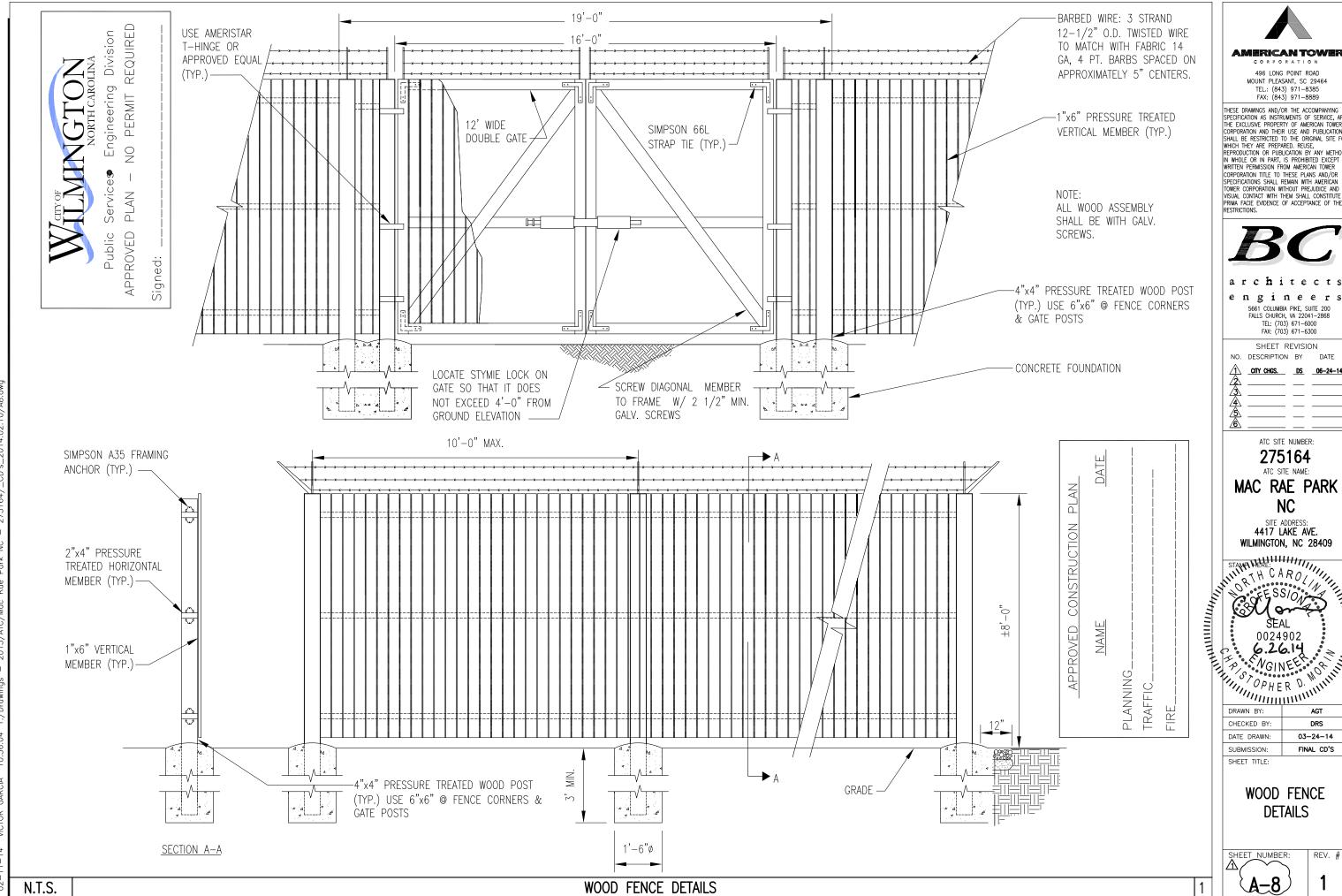
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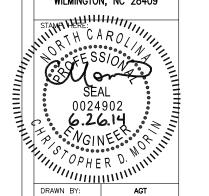
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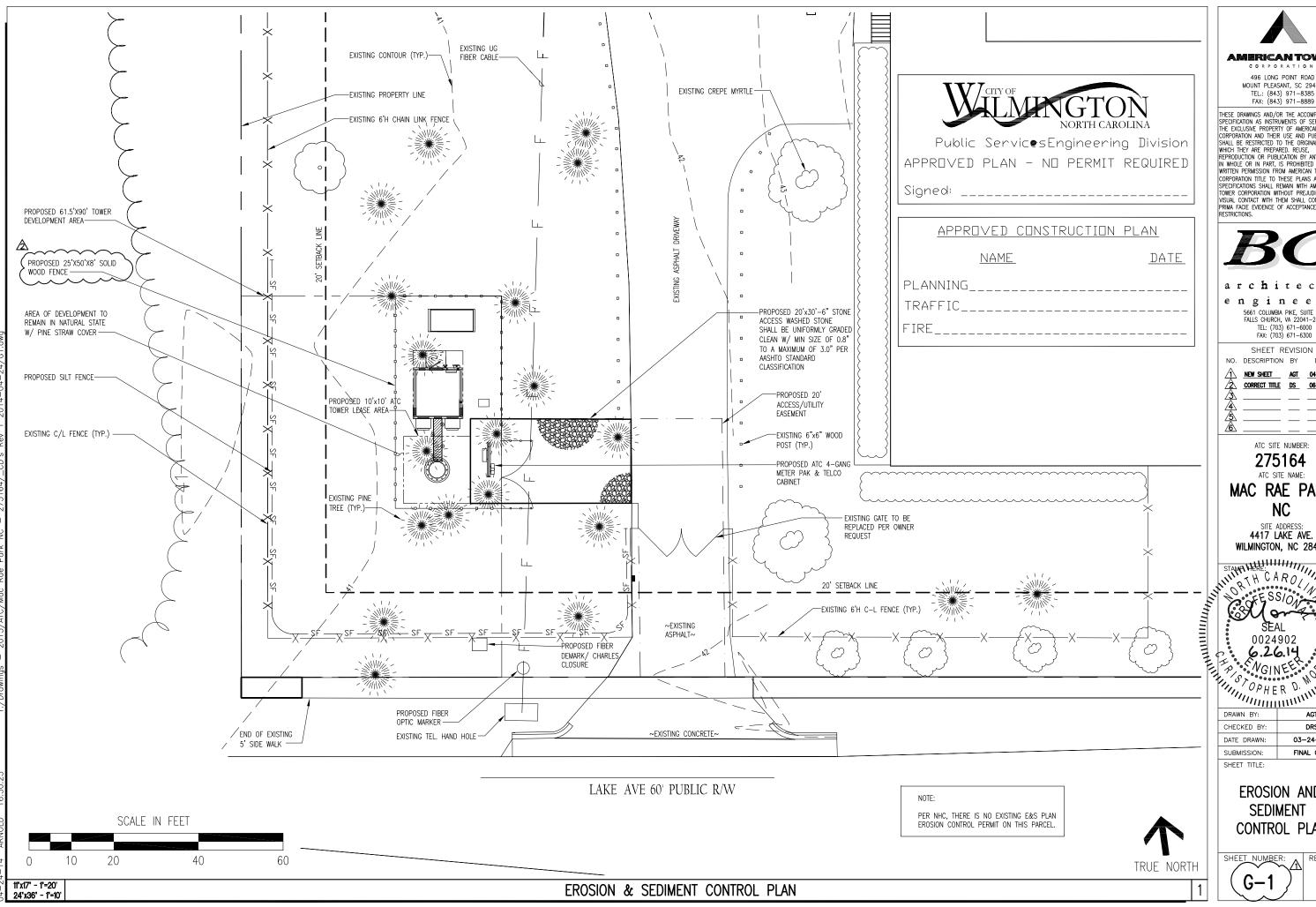
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WOOD FENCE DETAILS

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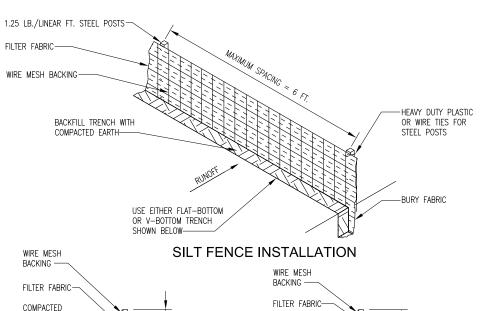
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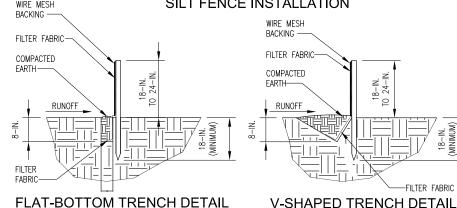
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EROSION AND SEDIMENT CONTROL PLAN

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SILT FENCE DETAIL

WHEN AND WHERE TO USE IT

SILT FENCE IS APPLICABLE IN AREAS:

WHERE THE MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE FENCE IS 100-FEET. WHERE THE MAXIMUM SLOPE STEEPNESS (NORMAL [PERPENDICULAR] TO FENCE LINE) IS 2H:1V. THAT DO NOT RECEIVE CONCENTRATED FLOWS GREATER THAN 0.5 CFS.

DO NOT PLACE SILT FENCE ACROSS CHANNELS OR USE IT AS A VELOCITY CONTROL BMP

MATERIALS

USE 48-INCH LONG STEEL POSTS THAT MEET THE FOLLOWING MINIMUM PHYSICAL REQUIREMENTS:

COMPOSED OF HIGH STRENGTH STEEL WITH MINIMUM YIELD STRENGTH OF 50,000 PSI. HAVE A STANDARD "T" SECTION WITH A NOMINAL FACE WIDTH OF 1.38-INCHES AND NOMINAL "T" LENGTH OF 1.48-INCHES.

WEIGH 1.25 POUNDS PER FOOT (± 8%).

HAVE A SOIL STABILIZATION PLATE WITH A MINIMUM CROSS SECTION AREA OF 17-SQUARE INCHES ATTACHED TO THE STEEL POSTS.

PAINTED WITH A WATER BASED BAKED ENAMEL PAINT.

USE STEEL POSTS WITH A MINIMUM LENGTH OF 4-FEET. WEIGHING 1.25 POUNDS PER LINEAR FOOT (+ 8%) WITH PROJECTIONS TO

AID IN FASTENING THE FABRIC. EXCEPT WHEN HEAVY CLAY SOILS ARE PRESENT ON SITE, STEEL

POSTS WILL HAVE A METAL SOIL STABILIZATION PLATE WELDED NEAR THE BOTTOM SUCH THAT WHEN THE POST IS DRIVEN TO THE PROPER DEPTH, THE PLATE WILL BE BELOW THE GROUND LEVEL FOR ADDED STABILITY. THE SOIL PLATES SHOULD HAVE THE FOLLOWING CHARACTERISTICS:

> BE COMPOSED OF MINIMUM 15 GAUGE STEEL HAVE A MINIMUM CROSS SECTION AREA OF 17-SQUARE INCHES.

BACK THE FABRIC WITH A WIRE MESH OF 32" MINIMUM WIDTH, AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

TOP AND BOTTOM STRANDS SHALL BE MINIMUM #10 GAUGE WITH #12 1/2 GAUGE STAY WIRES.

COMPOSED OF FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS COMPOSED OF AT LEAST 85%

POLYOLEFINS, POLYESTERS, OR POLYAMIDES. FORMED INTO A NETWORK SUCH THAT THE FILAMENTS OR DIMENSIONAL STABILITY RELATIVE TO EACH OTHER. FREE OF ANY TREATMENT OR COATING WHICH MIGHT

ADVERSELY ALTER

USE ONLY FABRIC MEETING THE REQUIREMENTS OF THE MOST CURRENT EDITION

SILT FENCE DETAIL

INSTALLATION

EXCAVATE A TRENCH APPROXIMATELY 6-INCHES WIDE AND 6-INCHES DEEP WHEN PLACING FABRIC BY HAND. PLACE 12-INCHES OF GEOTEXTILE FABRIC INTO THE 6-INCH DEEP TRENCH, EXTENDING THE REMAINING 6-INCHES TOWARDS THE UPSLOPE SIDE OF THE TRENCH. BACKFILL THE TRENCH WITH SOIL OR GRAVEL AND COMPACT.BURY 12-INCHES OF FABRIC INTO THE GROUND WHEN PNEUMATICALLY INSTALLING SILT FENCE WITH A SLICING METHOD. PURCHASE FABRIC IN CONTINUOUS ROLLS AND CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, WRAPPED THE FABRIC TOGETHER AT A SUPPORT POST WITH BOTH ENDS FASTENED TO THE POST, WITH A 6-INCH MINIMUM OVERLAP. INSTALL POSTS TO A MINIMUM DEPTH OF 24-INCHES. INSTALL POSTS A MINIMUM OF 1- TO 2- INCHES ABOVE THE FABRIC. WITH NO MORE THAN 3-FEET OF THE POST ABOVE THE GROUND. SPACE POSTS TO MAXIMUM 6-FEET CENTERS. ATTACH FABRIC TO WOOD POSTS USING STAPLES MADE OF HEAVY-DUTY WIRE AT LEAST 11/2-INCH LONG, SPACED A MAXIMUM OF 6-INCHES APART. STAPLE A 2-INCH WIDE LATHE OVER THE FILTER FABRIC TO SECURELY FASTEN IT TO THE UPSLOPE SIDE OF WOODEN POSTS. ATTACH FABRIC TO THE STEEL POSTS USING HEAVY-DUTY PLASTIC TIES THAT ARE EVENLY SPACED AND PLACED IN A MANNER TO PREVENT SAGGING OR TEARING OF THE FABRIC. IN CALL CASES, TIES SHOULD BE AFFIXED IN NO LESS THAN 4 PLACES. INSTALL THE FABRIC A MINIMUM OF 24-INCHES ABOVE THE GROUND. WHEN NECESSARY, THE HEIGHT OF THE FENCE ABOVE GROUND MAY BE GREATER THAN 24-INCHES. IN TIDAL AREAS, EXTRA SILT FENCE HEIGHT MAY BE REQUIRED. THE POST HEIGHT WILL BE TWICE THE EXPOSED POST HEIGHT. POST SPACING WILLREMAIN THE SAME AND EXTRA HEIGHT FABRIC WILL BE 4-. 5-. OR 6-FEET FALL. LOCATE SILT FENCE CHECKS EVERY 100 FEET MAXIMUM AND AT LOW POINTS. INSTALL THE FENCE PERPENDICULAR TO THE DIRECTION OF FLOW AND PLACE THE FENCE THE PROPER DISTANCE FROM THE TOE OF STEEP SLOPES TO PROVIDE SEDIMENT STORAGE AND ACCESS FOR MAINTENANCE AND CLEANOUT

INSPECTION AND MAINTENANCE

INSPECT EVERY SEVEN CALENDAR DAYS AND WITHIN 24-HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 1/2-INCHES OR MORE OF PRECIPITATION. CHECK FOR SEDIMENT BUILDUP AND FENCE INTEGRITY CHECK WHERE RUNOFF HAS FRODED A CHANNEL BENEATH THE FENCE, OR WHERE THE FENCE HAS SAGGED OR COLLAPSED BY FENCE OVERTOPPING. IF THE FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE SECTION OF FENCE IMMEDIATELY.

REMOVE SEDIMENT ACCUMULATED ALONG THE FENCE WHEN IT REACHES 1/3 THE HEIGHT OF THE FENCE, ESPECIALLY IF HEAVY RAINS ARE EXPECTED. REMOVE TRAPPED SEDIMENT FROM THE SITE OR STABILIZE IT ON SITE, REMOVE SILT FENCE WITHIN 30 DAYS AFTER FINAL STABILIZATION IS ACHIEVED OR AFTER TEMPORARY BEST MANAGEMENT PRACTICES (BMPS) ARE NO LONGER NEEDED. PERMANENTLY STABILIZE DISTURBED AREAS RESULTING FROM



Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED

Signed: _____

APPROVED CONSTRUCTION PLAN

NAME DATE PLANNING

CONSTRUCTION SEQUENCE

ITEMS MUST OCCUR IN THE ORDER LISTED; ITEMS CANNOT OCCUR CONCURRENTLY UNLESS SPECIFICALLY

- 1. PICK UP PERMIT FROM CITY OF WILMINGTON.
- 2. CONTACT CITY OF WILMINGTON TO SCHEDULE PRE-CONSTRUCTION MEETING.
- 3. PRE-CONSTRUCTION MEETING (ON-SITE)
- 4. INSTALLATION OF CONSTRUCTION ENTRANCE(S
- 5. CLEARING AND GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS
- 6. INSTALLATION OF PERIMETER CONTROLS (E.G., SILT FENCE)
- 7. CLEARING AND GRUBBING ONLY IN AREAS OF CULVERTS AND OTHER SEDIMENTATION CONTROL DEVICES
- 8. INSTALLATION OF CULVERTS (OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO NEXT STEP; AREAS DRAINING TO THESE STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES AND DIVERSIONS TO THE STRUCTURES ARE COMPLETELY
- 9. CLEARING AND GRUBBING OF SITE OR DEMOLITION (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED)
- 10. ROUGH GRADING, & INSTALLATION OF COMPOUND/TOWER/FENCING/UTILITIES AND LANDSCAPING.
- 11 FINE GRADING PAVING FTC
- 12. PERMANENT/FINAL STABILIZATION OF DISTURBED AREA.
- 13. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE COUNTY WILL DETERMINE WHEN TO REMOVE ALL TEMPORARY STRUCTURES.)
- 15. SUBMIT NOTICE OF TERMINATION TO SPARTANBURG COUNTY AS APPROPRIATE

NOTE:

IF FLOWS FROM OFFSITE AREAS WILL BE DIVERTED AROUND THE SITE AND THE ON-SITE STRUCTURES ARE NOTE DESIGNED TO HANDLE FLOWS FROM THE OFFSITE AREAS, THEN THE DIVERSIONS/PIPING FOR THE OFFSITE FLOWS MUST BE INSTALLED BEFORE LAND-DISTURBING ACTIVITIES BEGIN ON THE SITE; INCLUDE THIS IN THE SEQUENCE. SEDIMENT AND EROSION CONTROL MEASURES FOR THE DISTURBED AREAS FOR THE DIVERSION/PIPING MUST BE INSTALLED BEFORE THOSE AREAS ARE DISTURBED AND SHOULD BE SHOWN ON THE PLANS.

IF AN EXISTING DETENTION/SEDIMENT BASIN IS BEING MODIFIED TO HANDLE THE FLOWS FROM THE PROPOSED DEVELOPMENT, THEN IT MUST BE MODIFIED BEFORE LAND-DISTURBING ACTIVITIES BEGIN ON THE SITE. THIS SHOULD BE INCLUDED IN THE SEQUENCE.

INSTALLATION OF SOME PERMANENT WATER QUALITY DEVICES SHOULD OCCUR AFTER THE SITE IS STABILIZED: INCLUDE THIS IN THE SEQUENCE. CLEANOUT OF OTHER WATER QUALITY DEVICES THAT WERE USED DURING CONSTRUCTION SHOULD OCCUR AFTER SITE STABILIZATION.

NOTE:

MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES MUST CONTINUE UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE CONTROLS ARE REMOVED.

AMERICAN TOWER

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SHEET REVISION

DESCRIPTION BY DATE NEW SHEET AGT 04-24-14 CITY COMMENTS DS 06-24-14

ATC SITE NUMBER

275164 ATC SITE NAME:

MAC RAE PARK NC

> SITE ADDRESS 4417 LAKE AVE. WILMINGTON, NC 28409



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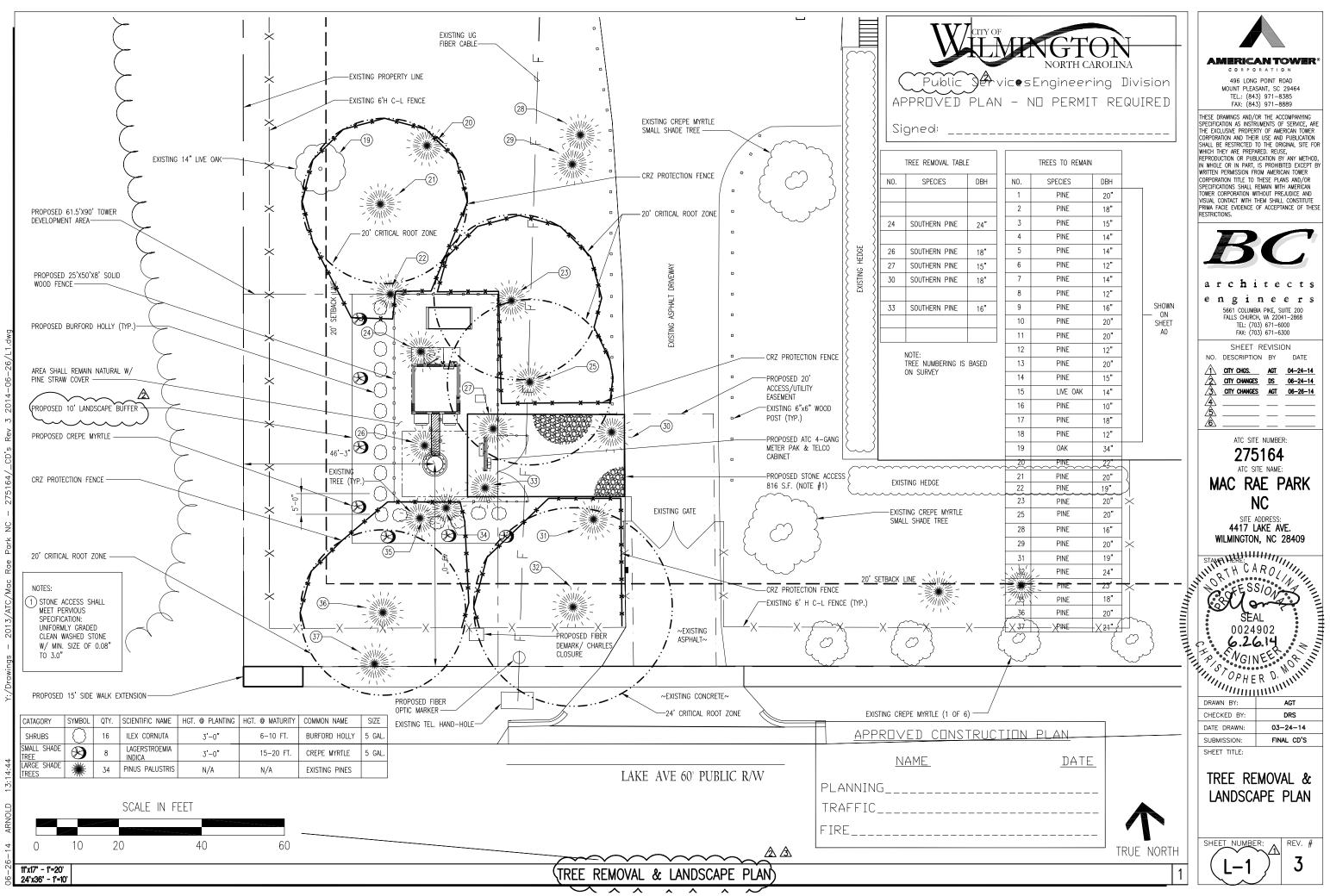
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SILT FENCE DETAILS & NOTES

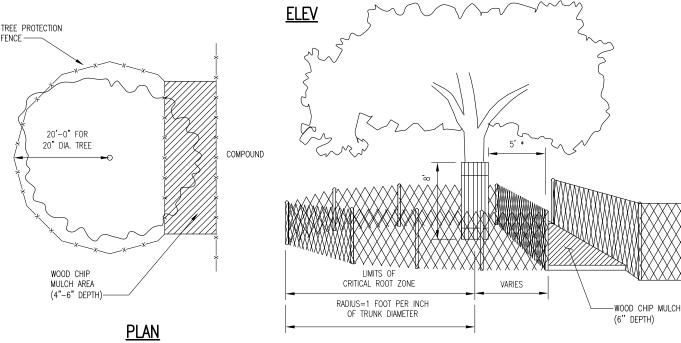




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ELEV TREE PROTECTION FENCE AT CRZ--DRIPLINE 20'-0" FOR 20" DIA. TREE CHAIN LINK FENCE CRZ- FENCE LOCATION (LIMITS OF CRITICAL ROOT ZONE) RADIUS=1 FOOT PER INCH OF TRUNK DIAMETER PLAN TREE PROTECTION FENCING DETAIL (GENERAL) N.T.S. N.T.S. NOTES:

THIS DETAIL TO BE USED ONLY IF PROTECTED TREE IS IN CLOSE PROXIMITY TO COMPOUND



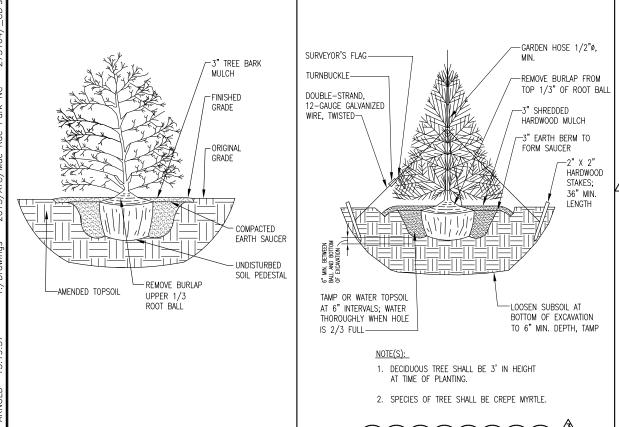
TREE PROTECTION FENCING DETAIL (NEAR COMPOUND)

1. EXISTING TREES AND PLANTS ARE BEING USED TO MEET LANDSCAPE CODE REQUIREMENTS. IF ANY TREES DIE OR ARE REMOVED THEY WILL BE REPLACED AS PER THE LANDSCAPE CODE REQUIREMENTS

- 2. ALL PLANT MATERIAL LOCATED WITHIN THE CONSTRUCTION AREA THAT IS DAMAGED OR REMOVED DUE TO WORK REQUIRED BY THE UTILITY COMPANY SHALL BE IMMEDIATELY REPLACED BY THE OWNER IN ACCORDANCE WITH LANDSCAPE CODE REQUIREMENTS.
- 3. GRASS OR GROUND COVER SHALL BE PLANTED ON ALL PORTIONS OF THE LANDSCAPE BUFFER AREA NOT OCCUPIED BY OTHER LANDSCAPE MATERIAL.

SHALL BE LOCATED AT THE CRITICAL ROOT ZONE RADIUS AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETED.

- 4. ALL UNHEALTHY OR DEAD PLANT MATERIAL SHALL BE REPLACED WITHIN ONE YEAR, OR BY THE NEXT PLANTING PERIOD, WHICHEVER COMES FIRST, WHILE OTHER DEFECTIVE PLANT MATERIAL SHALL BE REPLACED OR REPAIRED WITHIN THREE (3) MONTHS.
- 5. DIMENSION LINES HAVE BEEN USED ON THIS PLAN TO ESTABLISH THE GENERAL LOCATION OF TREE CANOPY PROTECTION AREA (TCPAs) AND REPRESENT MINIMUM DISTANCES. THE FINAL BOUNDARY FOR EACH TCPA SHALL BE ESTABLISHED IN THE FIELD TO INCLUDE CANOPY AREA OF ALL TREES AT OR WITHIN THE DIMENSION LINE.
- 6. TREE PROTECTION FENCING SHALL BE ERECTED ADJACENT TO ALL TCPAS PRIOR TO SITE DISTURBANCE APPROVAL TO PROTECT THE EXISTING TREE STANDS AND THEIR ROOT SYSTEMS. THE FENCING
- 7. DURING ALL CONSTRUCTION ACTIVITY (INCLUDES CLEARING, GRADING, BUILDING CONSTRUCTION, AND UTILITY CONSTRUCTION) A COPY OF THE APPROVED TREE PRESERVATION PLAN SHALL BE ON-SITE.
- 8. SINAGE IS REQUIRED ON TREE PROTECTION FENCING. SIINAGE SHALL READ: "TREE PROTECTION AREA: DO NOT ENTER". SIGNS SHALL BE WRITTEN IN BOTH ENGLISH AND SPANISH.
- arkappaings shall be spaced at 50 ft. Intervals with at least 2 signs per tree protection area.



Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED

APPROVED CONSTRUCTION PLAN	
<u>NAME</u> <u>DATE</u>	
PLANNING	
TRAFFIC	
FIRE	

AMERICAN TOWER

496 LONG POINT ROAD MOUNT PLEASANT, SC 29464 TEL.: (843) 971–8385 FAX: (843) 971–8889

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5661 COLUMBIA PIKE, SUITE 200 TEL: (703) 671-6000 FAX: (703) 671-6300

SHEET REVISION

NEW SHEET AGT 04-24-14 CITY COMMENTS AGT 06-24-14 CITY CHANGES AGT 06-26-14

ATC SITE NUMBER:

275164 ATC SITE NAME:

MAC RAE PARK

SITE ADDRESS: 4417 LAKE AVE. WILMINGTON, NC 28409



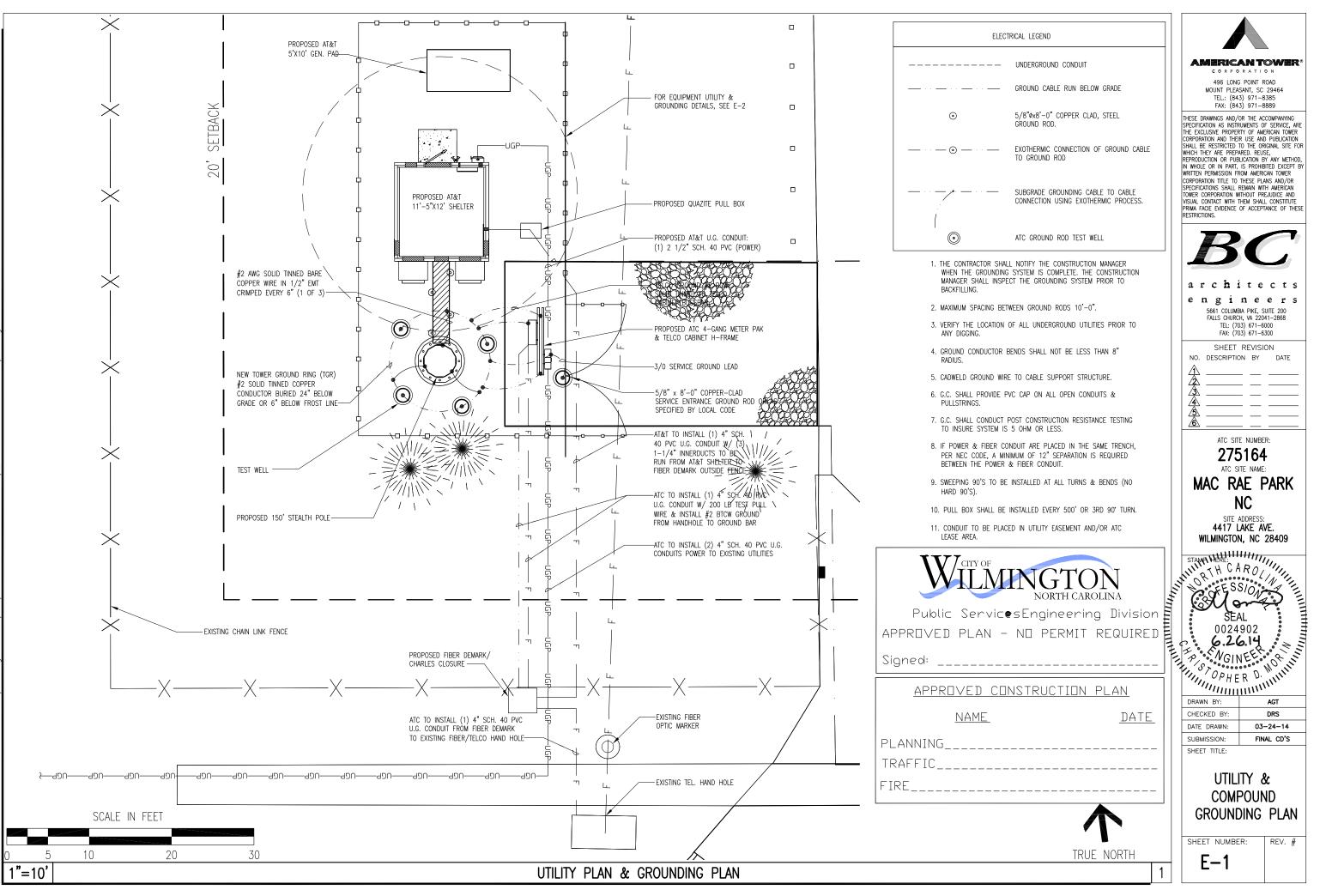
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DATE DRAWN:	03-24-14
SUBMISSION:	FINAL CD'S

LANDSCAPING NOTES & PROTECTION DETAILS

SHEET NUMBER:

LANDSCAPING NOTES

SHRUB PLANTING DETAIL 3 | N.T.S. TREE PLANTING DETAIL





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architects

engineers

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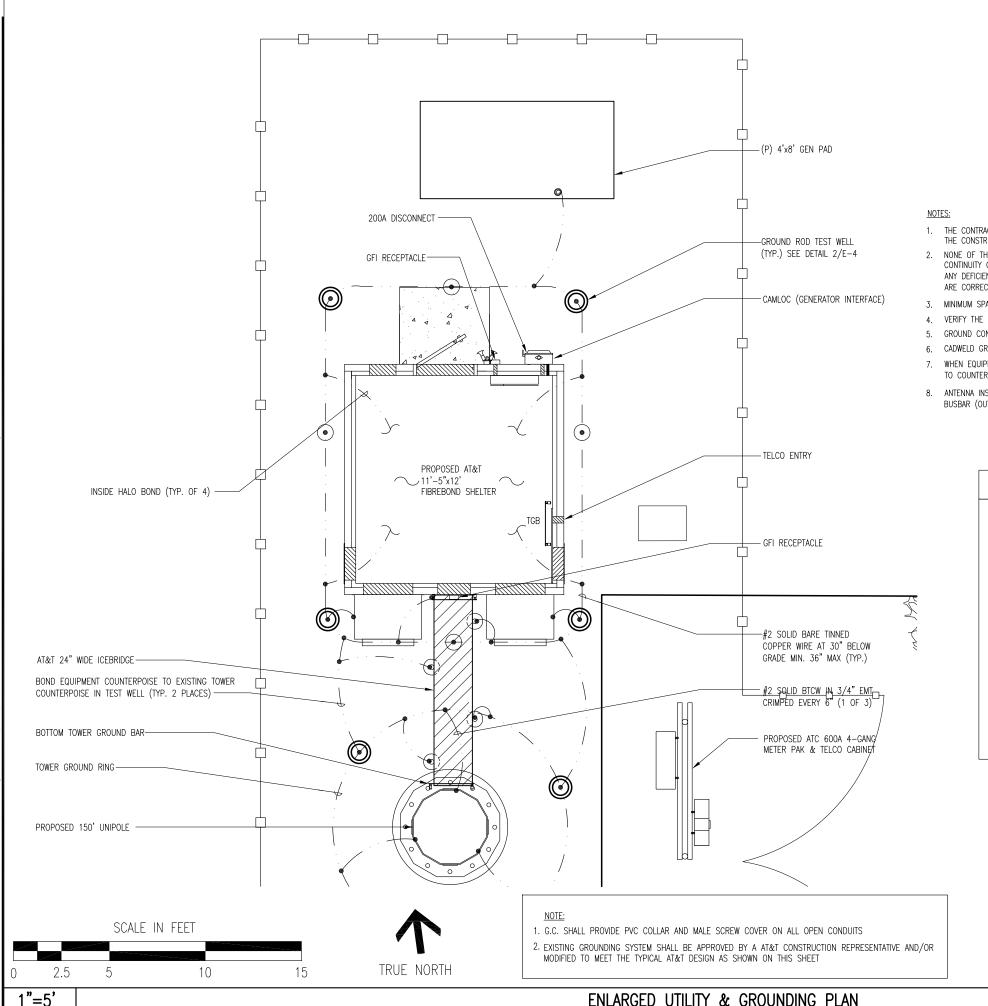
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SUBMISSION:	FINAL CD'S

UTILITY & **COMPOUND** GROUNDING PLAN

SHEET NUMBER:





Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED

- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
- NONE OF THE EXISTING GROUND SYSTEM IS SHOWN. THE CONTRACTOR SHALL FEILD VERIFY LOCATION AND THE CONTINUITY OF THE EXISTING GROUND SYSTEM PRIOR TO BONDING TO NEW GROUND COUNTERPOISE. REPORT ANY DEFICIENCIES TO THE OWNER'S REPRESENTATIVE. DO NOT BOND TO EXISTING SYSTEM UNTIL DEFENCIENCES ARE CORRECTED AND APROVED BY OWNER'S REPRESENTATIVE.
- 3. MINIMUM SPACING BETWEEN GROUND RODS 10'-0".
- 4. VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY DIGGING.
- 5. GROUND CONDUCTOR BENDS SHALL NOT BE LESS THAN 8" RADIUS.
- CADWELD GROUND WIRE TO CABLE SUPPORT STRUCTURE.
- WHEN EQUIPMENT SHELTER OR TOWER COUNTERPOISE IS WITHIN THREE (3) FEET OF GATE, BOND GATE POST DIRECTLY TO COUNTERPOISE WITH #2 SOLID BARE TINNED COPPER AND OMIT GATE POST TO GATE POST GROUND WIRE.
- 8. ANTENNA INSTALLATION CONTRACTOR TO PROVIDE & INSTALL TOP, MIDDLE & BOTTOM RF BUSBARS, & SHELTER WALL BUSBAR (OUTSIDE) BELOW PORTS.

ELECTRICAL LEGEND					
	UNDERGROUND CONDUIT				
	GROUND CABLE RUN BELOW GRADE				
·	5/8"ø x 8'-0" COPPER CLAD, STEEL GROUND ROD.				
· · · · · · · · · ·	EXOTHERMIC CONNECTION OF GROUND CABLE TO GROUND ROD				
	SUBGRADE GROUNDING CABLE TO CABLE CONNECTION USING EXOTHERMIC PROCESS.				
((©	GROUND ROD TEST WELL				

APPROVED CONSTRUCTION PLAN	
<u>NAME</u> <u>DATE</u>	-
PLANNING	_
TRAFFIC	_
FIRE	-



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architects

engineers

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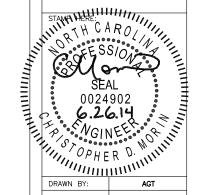
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SHEET TITLE:

ENLARGED GROUNDING PLAN

SHEET NUMBER: REV. # E-2

ENLARGED UTILITY & GROUNDING PLAN

	ANTENNA AND COAXIAL CABLE SCHEDULE														
ANTENNA MARK	SECTOR	ANTENNA	AZIMUTH	RAD CENTER	COAXIAL CABLE FEED LOCATION	COAX MFG	COAX LENGTH	COAXIAL CABLE SIZE	MIN. BENDING RADIUS	TMA MODEL	RRU MODEL	TECHNOLOGY	TAPE COLOR	TRX ANTENNA CONFIGURATION	DOWNTILT (ELEC.)
A-1	1	ANDREW SBNHH-1D65C	0°	145'	воттом	ANDREW	175'	1 1/4" ø	20"	N/A	ERICSSON RRUS01	LTE	RED	TX/RX1	4°
_	-		_	145'	-	ANDREW	175'	1 1/4" ø	20"	STI 1900AL	_	UMTS	(2) RED	TX	4*
A-2	-	ANDREW SBNHH-1D65C	-	133'	-	ANDREW		-	20"	-	=	-	-	TX	4°
_	-		_	133'	-	ANDREW		-	20"	_	_	-	_	TX/RX2	4°
B-1	2	ANDREW SBNHH-1D65C	120*	145'	воттом	ANDREW	175'	1 1/4" ø	20"	N/A	ERICSSON RRUS01	LTE	BLUE	TX/RX1	4*
_	-		_	145'	-	ANDREW	175'	1 1/4" ø	20"	STI 1900AL	_	UMTS	(2) BLUE	TX	4*
B-2	-	ANDREW SBNHH-1D65C	-	133'	-	ANDREW		-	20"	-	_	-	-	TX	4*
_	-		_	133'	-	ANDREW			20"	-	-	-	_	TX/RX2	4*
C-1	3	ANDREW SBNHH-1D65C	240°	145'	воттом	ANDREW	175'	1 1/4" ø	20"	N/A	ERICSSON RRUS01	LTE	GREEN	TX/RX1	4*
_	-		_	145'	-	ANDREW	175'	1 1/4" ø	20"	STI 1900AL	-	UMTS	(2) GREEN	TX	4*
C-2	-	ANDREW SBNHH-1D65C	-	133'	-	ANDREW		-	20"	-	-	-	-	TX	4*
-	-		-	133'	-	ANDREW		-	20"	-	-	-	-	TX/RX2	4*
	TOTAL LENGTH 1,050'														
									DECLI	NATION = 9.0°	7' W				

N.T.S. ANTENNA AND COAXIAL CABLE SCHEDULE (REFER TO FINAL RFDS PRIOR TO INSTALLATION)

APPROVED CONSTRUCTION P	LAN
<u>NAME</u>	DATE
PLANNING	
TRAFFIC	
TRE	

Wilmington NORTH CAROLINA

Public Servic●sEngineering Division

APPROVED PLAN - NO PERMIT REQUIRED

Signed: _______

COAX PORT ASSIGNMENTS
(VIEW FROM INSIDE EQUIPMENT
ROOM/SHELTER)
ANTENNA POSITION
CURRENT

R	R	R	(R)
В	В	В	B
G	G	G	G
		B B	B B B

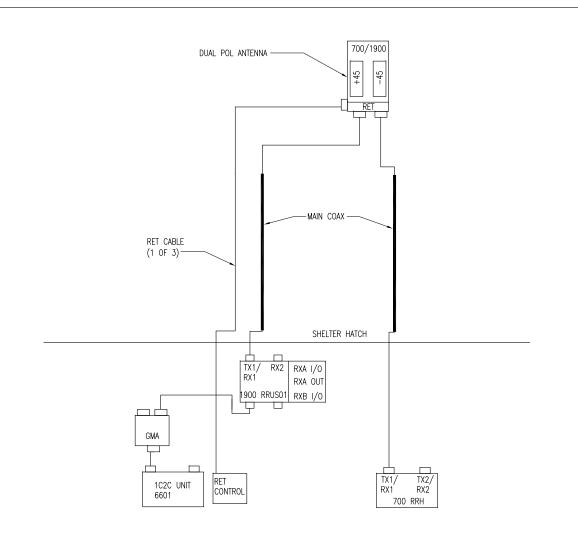
l	NO.	TAPE	TAG	LOCATIONS
	1.	х		EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS
	2.	х		EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
	3.		Х	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER. (IF SHELTER IS USED)
	4.	х		ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
	5.	*	*	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.

N.T.S.

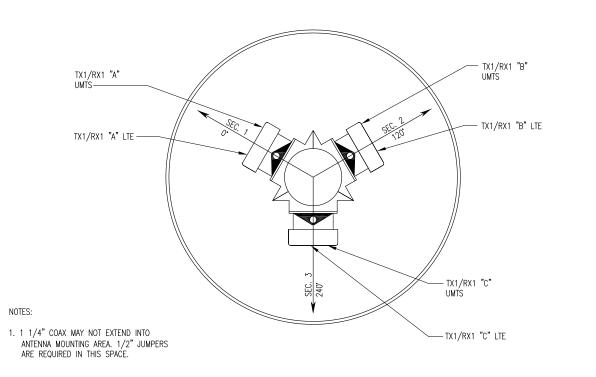
CABLE MARKING LOCATIONS TABLE

NOTES:

- 1. SECTOR ORIENTATION/AZIMUTH WILL VARY FROM REGION TO REGION AND IS SITE SPECIFIC. REFER TO RF REPORT FOR EACH SITE TO DETERMINE THE ANTENNA LOCATION AND FUNCTION OF EACH TOWER SECTOR FACE.
- THE STANDARD IS BASED ON EIGHT COLORED TAPED—RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND SLATE (GRAY). THESE TAPES SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
- USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBERAS SHOWN ON "CABLE MARKING COLOR CONVENTION TABLE".
- 4. ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
- 5. ALL COLOR BANDS INSTALLED AT THE TOWER TOP SHALL BE A MINIMUM OF 3" WIDE AND SHALL HAVE A MINIMUM OF 3/4" OF SPACING BETWEEN EACH COLOR.
 6. ALL COLOR BANDS INSTALLED AT OR NEAR THE GROUND SHALL BE A MINIMUM
- OF 3/4" WIDE.
- 7. ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
- 8. COLOR CODE AT TOWER AND BEFORE SHELTER.
- * (DENOTES TAG OR TAPE)



N.T.S. TYPICAL ANTENNA CABLE CONFIGURATION (1 ANTENNA PER SECTOR)





AMERICAN TOWER

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architect

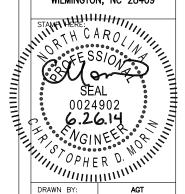
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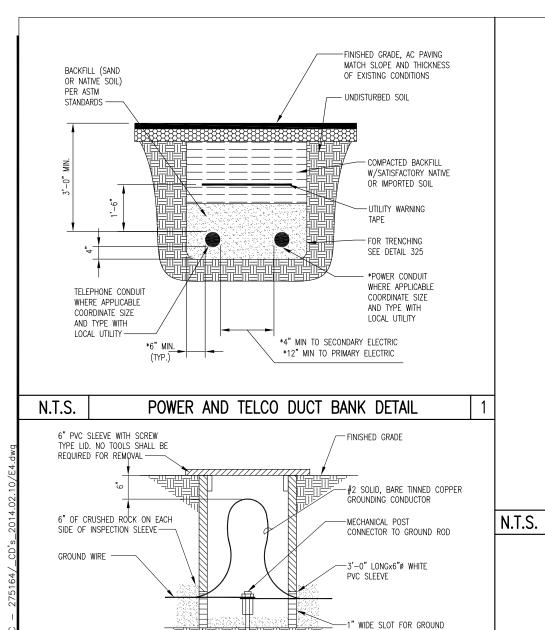
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AT&T ELECTRICAL DETAILS

SHEET NUMBER: REV. #

COLOR CODE DETAILS & NOTES 2 N.T.S. COAX CODES (1 ANTENNA PER SECTOR)



GROUND ROD TEST WELL

GRADE

CADWELD

3" OF CRUSH ROCKS OR

N.T.S.

N.T.S.

STONES BELOW WELD. WELD

WIRE, EXTEND 2" ABOVE

-5/8"øx8' LONG COPPER

CLAD STEEL GROUND ROD

N.T.S.

GROUND RING

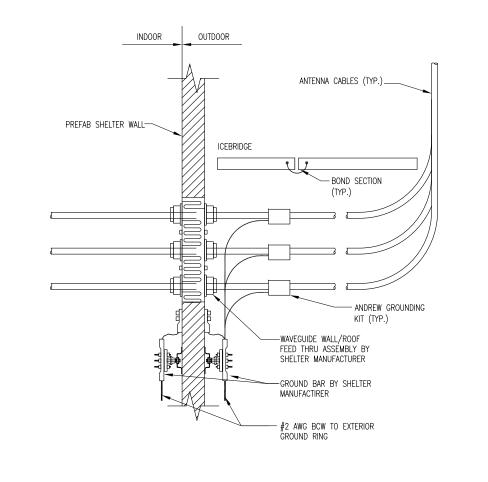
-2'-6" BELOW GRADE

RING GROUND #2 AWG BCW SOLID, TINNED

- GROUND ROD COPPER CLAD

STEEL 5/8"ø x 8'-0" LONG

GROUND ROD



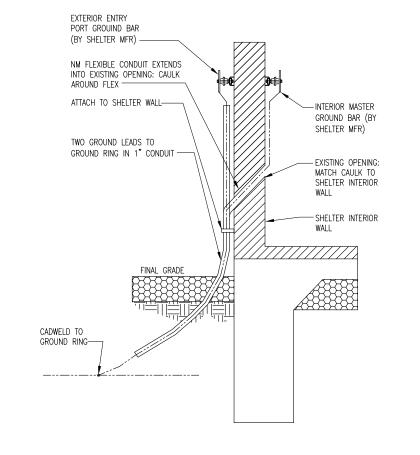
WILMINGTON NORTH CAROLINA

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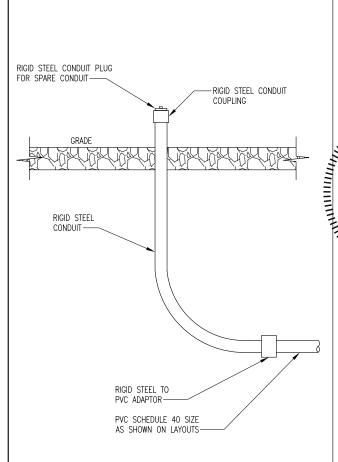
Signed: _____

APPROVED CONSTRUCTION F	PLAN
NAME	DATE
PLANNING	
TRAFFIC	
FIRE	

CABLE INSTALLATION W/ WALL/ROOF FEED THRU ASSEMBLY



SHELTER WALL PENETRATION DETAIL



UNDERGROUND CONDUIT STUB-UP 6

5 N.T.S.



AMERICAN TOWE

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aren rect

e n g i n e e r s 5661 COLUMBIA PIKE, SUITE 200

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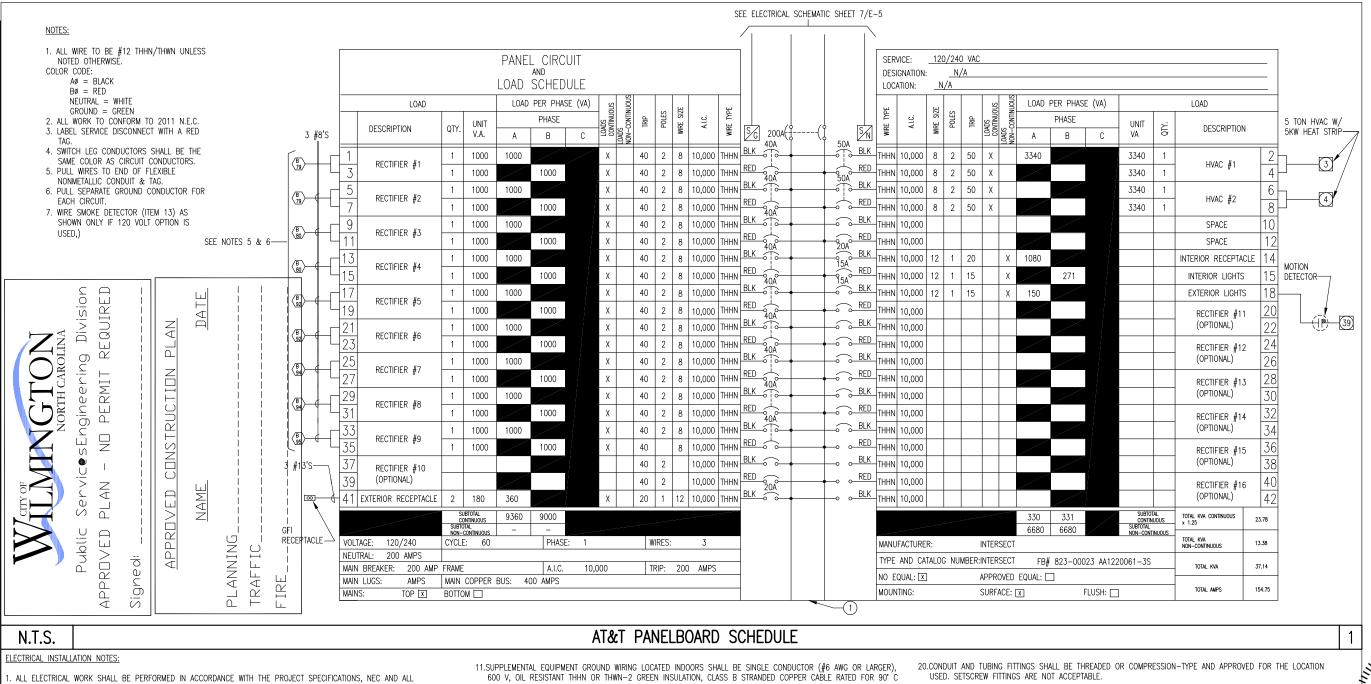
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AT&T ELECTRICAL DETAILS

SHEET NUMBER: REV. #

E-4



CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

ALL CIRCUITS SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E. HOTS), GROUNDING, AND THE CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA.

ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS, (I.E. PANELBOARD AND CIRCUIT ID'S).

PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS

. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOLS TO REMOVE SHARP EDGES.

10.POWER CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AND LARGER) 600V, OIL RESISTANT THHN OR THWN-2 CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE

(WET AND DRY) OPERATION: LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE

12.POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#4 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET. LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE

13.ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C

14.RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

15.ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 OFR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16.ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17.GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

18.RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND, DIRECT BURIED, IN AREAS OR OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

19.LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

21.CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA UI. ANSI/IFFF. AND NFC.

22.WIREWAYS SHALL BE FPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER. DESIGNED TO SWING OPEN DOWNWARD: SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA I (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER)

23.EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA I (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

24.METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS I; AND RATED NEMA I (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS

25.NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA I (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS

26.THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

27.THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

AMERICAN TOWER

CORPORATION

496 LONG POINT ROAD MOUNT PLEASANT, SC 29464 FAX: (843) 971-8889

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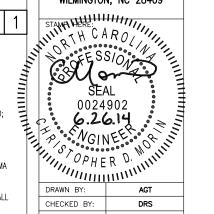
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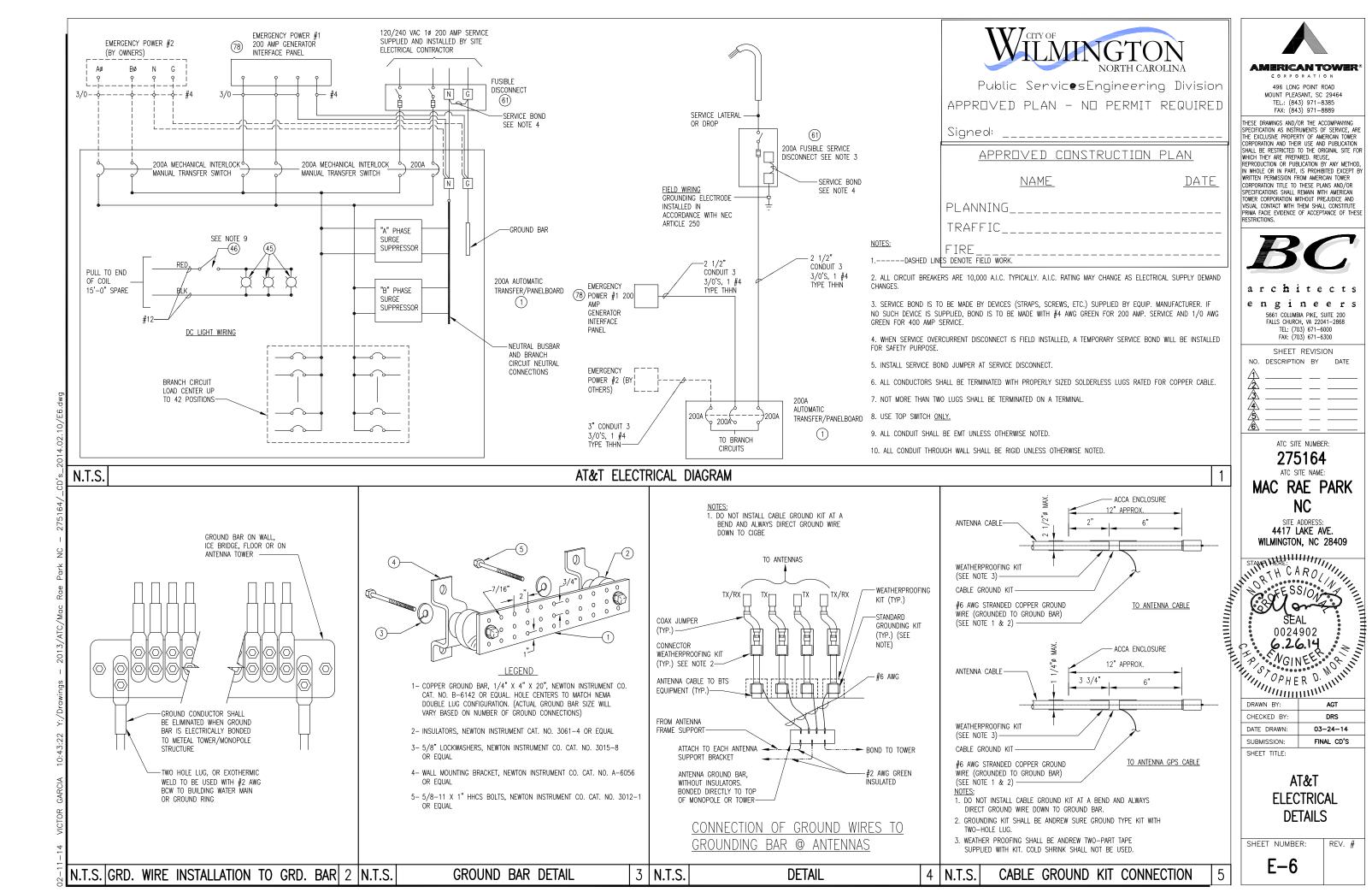
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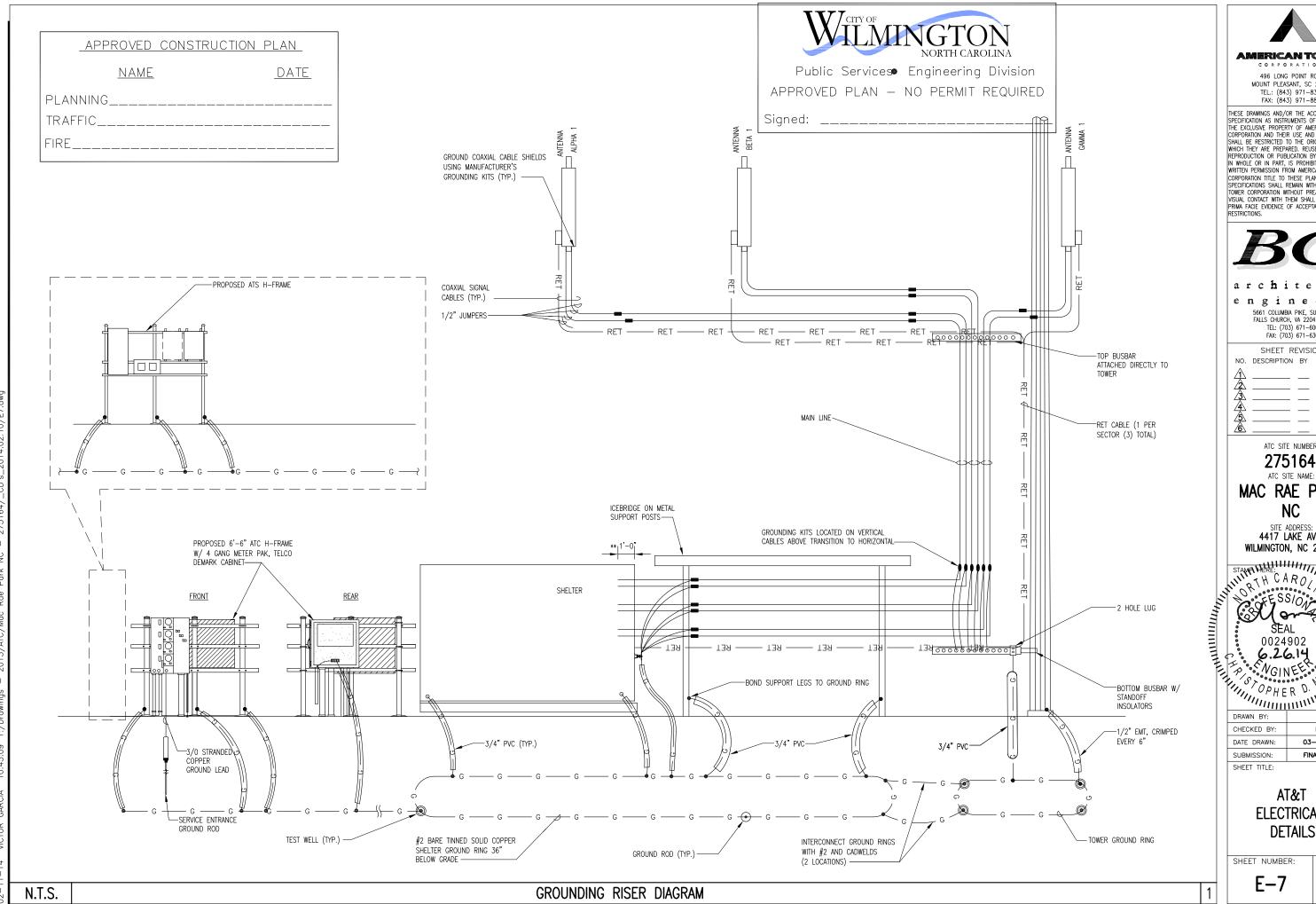
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AT&T **PANELBOARD SCHEDULE**

SHEET NUMBER: REV. # E-5

NOTES





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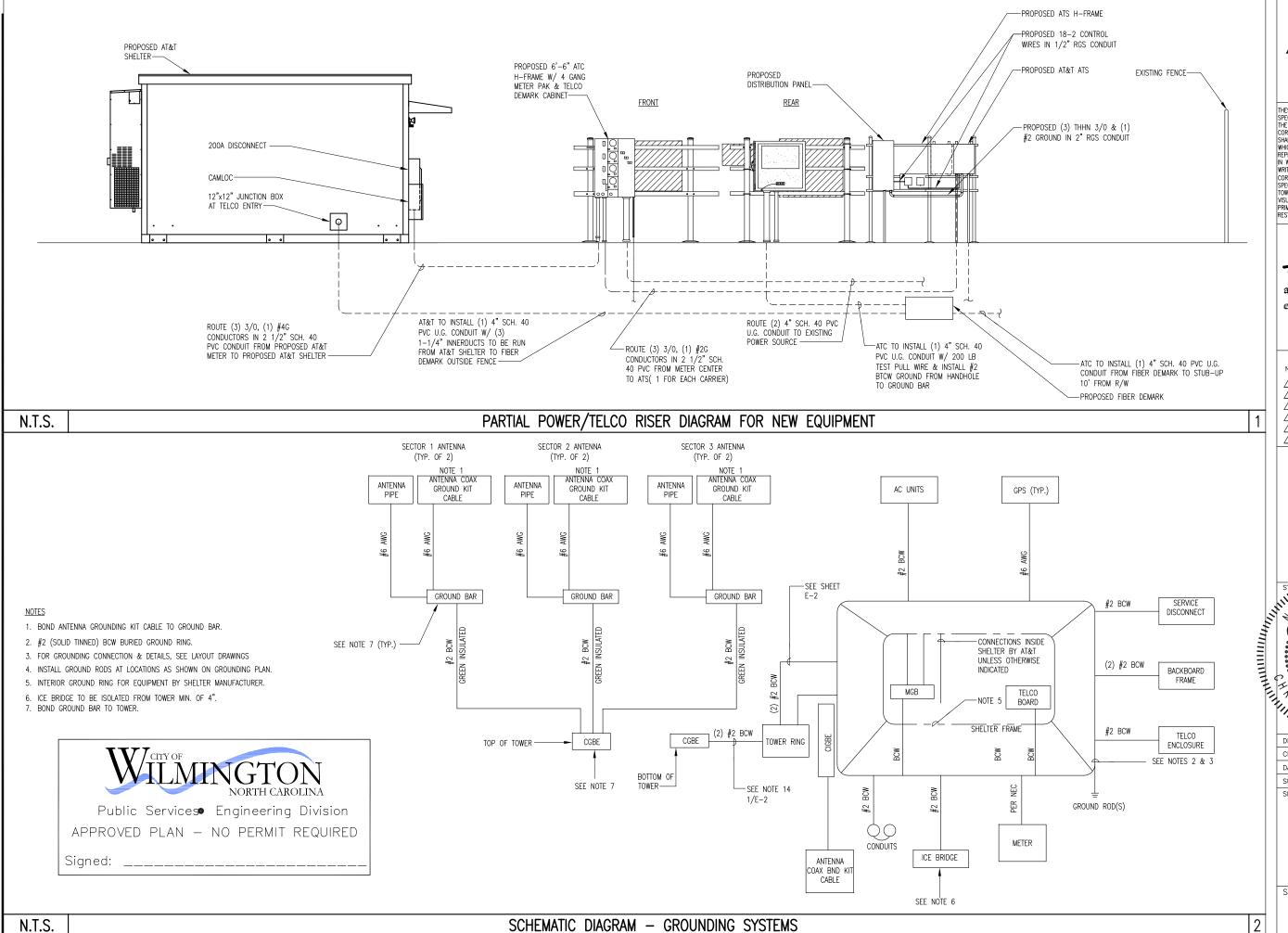
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AT&T **ELECTRICAL DETAILS**

SHEET NUMBER: REV. #





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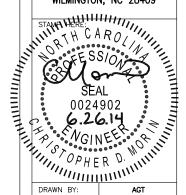
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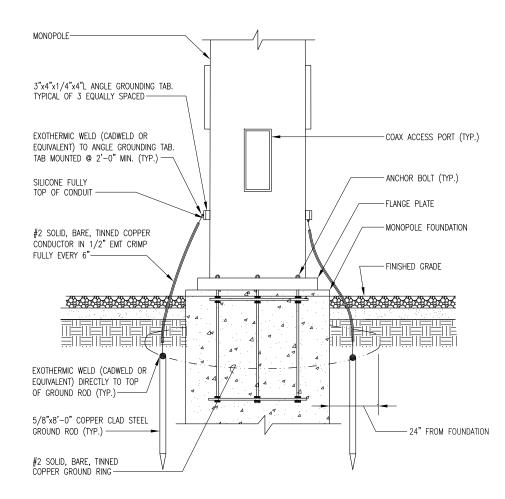
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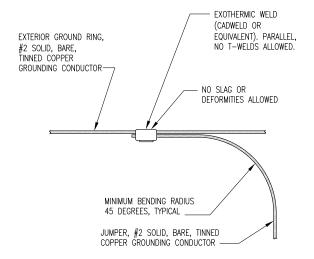
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Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED





APPROVED CONSTRUCTION F	<u>'LAN</u>
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TRAFFIC	
FIRE	
	NAME PLANNING TRAFFIC



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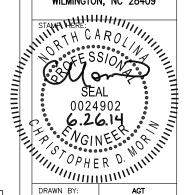
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ELECTRICAL DETAILS

SHEET NUMBER: REV. #

GROUND RING DETAIL N.T.S. TOWER GROUNDING DETAIL WITH FOOTING 1 N.T.S.

NOTES:

- UNLESS OTHERWISE NOTED, ALL UNDERGROUND PVC TO BE SCH 40. ALL OTHER UNDERGROUND PVC CONNECTIONS TO BE SCH 80.
- 2. ALL ABOVE GRADE PVC TO BE SCH 40. ALL CONNECTIONS TO BE SCH 40 PVC OR SEALTIGHT. VERIFY WITH CONSTRUCTION MANAGER PRIOR TO BID.
- ALL WIRE CONNECTIONS & CONDUITS TO BE SUPPLIED BY CONTRACTOR UNLESS OTHERWISE NOTED OR SPECIFIED BY CONSTRUCTION MANAGER.
- 4. ALL AT&T CONDUITS SHALL TRANSITION BELOW GRADE AT ELBOW FROM PVC TO RGS ABOVE GRADE.
- 5. TELCO DEMARK CABINET SIZE MAY BE DETERMINED BY LOCAL TELCO PROVIDER.

INSTALL 200A BREAKER FOR

AT&T (SLOT A) -

SQUARE "D" MP 600A METER-PAK BRANCH UNIT PART

APPROVED FOUIPMENT

FUTURE (1) 2 1/2" PVC TO ATS, EACH CARRIER-

FINISHED GRADE -

PVC TO AT&T

SHELTER DISC. (C.F.C.I.)——

12"ø MINIMUM

SERVICE ENTRANCE GROUND PER CODE -

(1) 2 1/2" SCH. 40

(2) 4" PVC WITH PULL CORD FOR POWER TO UTILITY COMPANY POINT OF CONNECTION

3/4" PVC-1#2/0 CU. GRD.-

#MPR86200, MPH86200 OR

PARTS LIST - O.F.C.I.			
ITEM	SPECIFICATION	DESCRIPTION	QTY.
(<u>-</u>)	SCH. 40	84" x 3.5" O.D. RIGID GALVANIZED PIPE	2
2	P1000 T	1 5/8" SLOTTED UNISTRUT CHANNEL	6
3		3-1/2" O.D. PIPE CAP	2
4		1/2 x 3-5/8 x 5" GALV. U-BOLT ASSY.	6
5		3/8" GALV. FLAT WASHER	12

-(3)(TYP.)

-(2)(TYP.)

-(4) (TYP.)

(1) (TYP.)

8'-0"

6'-0"

(TYPICAL) 2-

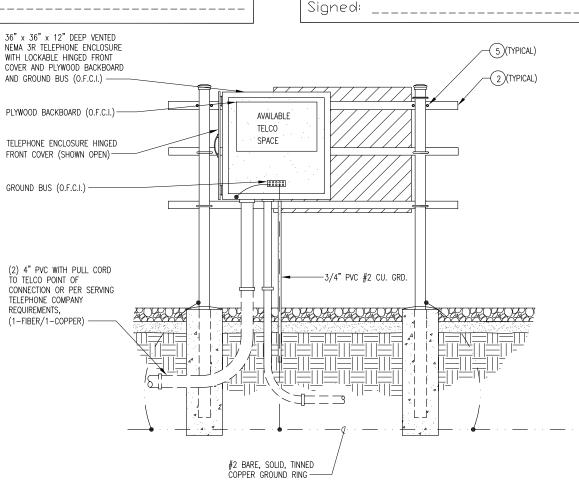
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- INSTALL H- FRAME AS DETAILED IN EXHIBIT A- 1. THIS IS A STANDARD DRAWING & ELECTRICAL EQUIPMENT IS TO BE SQUARE "D" OR APPROVED EQUAL & MAIN BUSS RATING SHALL BE 600 AMPS. FINAL CONFIGURATION SHALL BE (4) 200 AMP METERS AVAILABLE. AN AREA OF 3' X 3' SHALL BE SET ASIDE ON THE H-FRAME FOR FUTURE LIGHTING CONTROLLER INSTALLATION.
- 2. INSTALL (2) 4" SCH 40 PVC CONDUITS FROM MAIN METER PAK TO POWER DEMARK LOCATION DETERMINED BY POWER COMPANY. CONTRACTOR SHALL INSTALL PULL— STRINGS IN EACH CONDUIT AS REQUIRED. DISTANCE NOT TO EXCEED 150'. MINIMUM DEPTH OF 48" AND CONTRACTOR SHALL INSTALL WIRE— REINFORCED WARNING TAPE 12" BELOW SURFACE.
- 3. INSTALL (1) 4" SCH 40 PVC CONDUIT FROM TELCO CABINET TO FIBER DEMARK LOCATION, DETERMINED BY LOCAL TELEPHONE SERVICE PROVIDER. CONTRACTOR SHALL INSTALL (1) 200# PULL- CORDS & #2 SOLID BCTW IN THE CONDUIT. DISTANCE NOT TO EXCEED 150'. MINIMUM DEPTH OF 36" AND CONTRACTOR SHALL INSTALL WIRE- REINFORCED WARNING TAPE 12" BELOW SURFACE
- 4. CONNECT #2 SOLID TINNED COPPER TO H- FRAME POSTS VIA EXOTHERMIC WELD AND CONNECT #2 SOLID TINNED COPPER LEADS TO EXISTING GROUND RING FOR SITE AND TOWER VIA EXOTHERMIC WELD.
- 5. INSTALL SERVICE ENTRANCE GROUND ROD AT LOCATION WHERE MAIN TERMINAL BOX IS MOUNTED ON H- FRAME. PROVIDE INSPECTION WELL AT GROUND ROD LOCATION FOR INSPECTION REQUIREMENTS.
- 6. LABEL METER CENTERS PER POWER COMPANY REQUIREMENTS. IF NO REQUIREMENTS, LABEL EACH SLOT STARTING FROM TOP SLOT "A"1D, "B", & "C". :LABELS SHALL BE ULTRA— VIOLET RESISTANT. METER "A" SHALL BE RESERVED FOR AT&T. METER SHALL ALSO HAVE A LABEL STATING "AT&T".

UTILITY SCOPE OF WORK

APPROVED CONSTRUCTION PLAN NAME PLANNING TRAFFIC FIRE







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CORPORATION TITLE TO THESE PLANS AND/OR SPECIFICATIONS SHALL REMAIN WITH AMERICAN TOWER CORPORATION WITHOUT PREJUDICE AND

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ELECTRICAL DETAILS AND NOTES

REV. #

SHEET NUMBER:

N.T.S.

UTILITY SERVICE H-FRAME - FRONT AND REAR ELEVATIONS

E-10

APPROVED CONSTRUCTION	PLAN
<u>NAME</u>	DATE
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SYMBOLS LIST

(SYMBOLS SHOWN MAY NOT BE USED ON THIS PROJECT)

 CONDUIT RISER UP CONDUIT RISER DOWN

GROUNDING CONDUCTOR

INDICATES CIRCUIT CONTINUATION

ENCLOSED CIRCUIT BREAKER, SIZE AS SHOWN.

FUSED DISCONNECT SWITCH. SIZE AS SHOWN.

RECEPTACLE PANELBOARD, 120/240 VOLT. NOTES: REFERENCE SYMBOLS

DENOTES "SEE NOTE NO. 1. INDICATES MOUNTING HEIGHT AFF.

EXISTING ELEC EQUIPMENT TO REMAIN.

ABBREVIATIONS

A, AMP AFF AN	AMPERE ABOVE FINISHED FLOOR ANTENNA	kVA kWH L LB	KILOVOLT AMPS KILOWATT HOURS LENGTH POUND
AWG	AMERICAN GAUGE WIRE	MAX M.L.O.	MAXIMUM MAIN LUG ONLY
C CAB C/B	CONDUIT CABINET CIRCUIT BREAKER	N NEC	NEUTRAL NATIONAL ELECTRICAL CODE
CKT COAX	CIRCUIT COAXIAL	NO. NTS	NUMBER NOT TO SCALE
CO CONTR	COMPANY CONTRACTOR	0.C. P	ON CENTER POLE
D db DEG DESCRIP	DEPTH DECIBEL DEGREE DESCRIPTION	R.G.S.	RIGID GALVANIZED STEEL
DIA DWG	DIAMETER DRAWING	SCH SWBD	SCHEDULE SWITCHBOARD
ECB	ENCLOSED CIRCUIT	TEL (TYP)	TELEPHONE TYPICAL
ELEC (E)	BREAKER ELECTRICAL EXISTING	UL	UNDERWRITER'S LABORATORY
FT G	FEET GROUND	V W	VOLT WIDTH OR WIRE
IN	INCH	XFMR	TRANSFORMER

INCH

ELECTRICAL SPECIFICATION

- 1. FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT SERVICES FOR ALL ELECTRICAL WORK AS INDICATED IN ACCORD WITH PROVISIONS OF CONTRACT DOCUMENTS. COORDINATE WITH WORK OF ALL OTHER TRADES. FURNISH AND INSTALL ALL SUPPLEMENTARY OR MISCELLANEOUS ITEMS AND DEVICES TO SECURE AND COMPLETE
- 2. FOR EXACT LOCATIONS OF BUILDING ELEMENTS, REFER TO ARCHITECTURAL DWG'S. FIELD VERIFY LOCATIONS AND ARRANGEMENT OF ALL EXISTING SYSTEMS AND FQUIPMENT.
- 3. ALL EXTERIOR DEVICES AND EQUIPMENT SHALL BE WEATHERPROOF, NEMA-3R.
- 4. PERFORM ALL WORK IN ACCORD WITH FOLLOWING CODES:
 - 1. FEDERAL, STATE AND LOCAL CODES, REGULATIONS AND ORDINANCES.
 - 2. NATIONAL ELECTRICAL CODE (NEC), 2011 EDITION.
 - 3. ALL AUTHORITIES HAVING JURISDICTION.
- 5. USE UL LABELED ELECTRICAL MATERIALS WHERE LISTING HAS BEEN ESTABLISHED FOR MATERIALS OR DEVICES IN QUESTION.
- 6. SAFETY SWITCH: HEAVY DUTY TYPE IN NEMA-1 ENCLOSURE, NEMA-3R IN DAMP OR WET LOCATIONS.
- 7. CONDUIT: ALL ELECTRIC METALLIC TUBING CONNECTORS SHALL BE COMPRESSION TYPE (NO POT-METAL AND SET SCREW), MIN. 3/4". USE FLEXIBLE METAL (STEEL) CONDUIT FOR CONNECTION TO ALL VIBRATING EQUIPMENT AND CASEWORK.
- 8. WIRE IN CONDUIT SIZES #10 AWG AND SMALLER SHALL BE SOLID COPPER WITH TYPE THWN/THHN 600 VOLT INSULATION. THE MIN. CONDUCTOR SIZE SHALL BE NO. 12 AWG. CONTROL WIRING MAY BE NO. 14 AWG. A GROUND WIRE SHALL BE INSTALLED IN ALL CIRCUITS. WIRE OF SIZES 8 AWG AND LARGER SHALL BE STRANDED COPPER WITH TYPE XHHW, THW OR THHN 600 VOLT INSULATION. SPLICES FOR WIRE SIZES #10 AWG AND SMALLER SHALL BE CONICAL SPRING TYPE DEVICES. WIRE SIZES OF #8 ÄWG AND LARGER SHALL HAVE SPLIT-BOLT CONNECTORS WITH SUFFICIENT LAYERS OF TAPE TO EQUAL INSULATION OF WIRE BEING SPLICED.
- 9. PROVIDE NAMEPLATES ON ALL PIECES OF ELECTRICAL EQUIPMENT, SUCH AS, CIRCUIT BREAKERS, DISCONNECT SWITCHES, PANELBOARDS, ALL PULL BOXES. NAMEPLATES SHALL BE ENGRAVED WITH WHITE LETTERS ON A BLUE FIELD, 2-1/2"X3/4" WITH 1/4" HIGH (MIN.) LETTERS. PLATE MATERIAL SHALL BE TOUGH MULTI-LAYERED ACRYLIC (1/8" THICK MIN.) "SETONFLEX" TO WITHSTAND EXTREME INDOOR AND OUTDOOR TEMPERATURES. PLATE SHALL HAVE PRESSURE SENSITIVE ADHESIVE BACKING SUITABLE FOR OUTDOORS.
- 10. THE EQUIPMENT SHALL BE PROVIDED BY AS A PREFABRICATED PACKAGED UNIT. THE CONTRACTOR IS TO PROVIDE ALL OTHER EQUIPMENT, CONDUIT AND CABLING FOR A COMPLETE JOB
- 11. ALL TERMINATIONS SHALL BE LISTED AND IDENTIFIED FOR USE WITH 75°C RATED CONDUCTORS.
- 12. POWER COMPANY OR THE CONTRACTOR WHERE REQUIRED BY THE POWER COMPANY, SHALL TERMINATE THE POWER CABLES (SUPPLIED BY THE POWER CO.) AT THE UTILITY
- 13. CONDUIT LINES SHALL HAVE A CONTINUOUS SLOPE DOWNWARD AND AWAY FROM THE SHELTER TO THE PROPERTY LINE SO THAT WATER WILL FLOW AWAY FROM THE SHELTER. TRENCHES SHALL BE EXCAVATED ALONG STRAIGHT LINES BEFORE CONDUITS ARE LAID SO THE ELEVATION CAN BE ADJUSTED, IF NECESSARY, TO AVOID UNSEEN OBSTRUCTIONS. MANUFACTURED BENDS SHALL HAVE A MIN. RAD. 36" FOR CONDUITS.
- 14. BENDS SHALL HAVE A MINIMUM RADIUS 36" FOR CONDUITS. ALL CONDUITS ENTERING THE SHELTER SHALL BE SEALED WITH SEALANTS THAT ARE IDENTIFIED FOR USE WITH THE CARLE INSULATION. SHIELD. OR OTHER COMPONENTS. A BEAD OF SILICONE SHALL BE PLACED AROUND ALL CONDUIT PENETRATIONS INTO THE SHELTER.

- 15. METER SOCKET TO BE SUPPLIED BY OR AS PER POWER COMPANY REQUIREMENTS
- 16. GROUND FAULT PROTECTION IS REQUIRED FOR ANY UTILITY RECEPTACLES.
- 17. WHITE/NEUTRAL, GREEN/GROUND, SHALL BE MAINTAINED THROUGHOUT THE SITE FLECTRICAL SYSTEM

CABLE WORKS GENERAL NOTES

- 1. ALL COAX CABLE SHALL BE INSTALLED WITH A "DRIP LOOP" WHEN TURNING FROM VERTICAL TO HORIZONTAL. JUMPER LENGTH SHALL NOT EXCEED 6' ON EACH SIDE OF
- 2. ALL COAX CABLES SHALL BE RFS CELLFLEX SERIES. ALL CONNECTORS TO BE 7/16 DIN FEMALE CAPTIVATED. ALL JUMPERS SHALL BE LCF SERIES (NO SUPERFLEX) 7/16 MALE DIN TO 7/16 MALE DIN AND SHALL BE 6' LONG MAX. (UNLESS IMPOSSIBLE). ALL EXTERIOR CONNECTIONS SHALL BE WATERPROOF TAPED
- 3. ALL ANTENNA MOUNTS MUST BE GROUNDED. ALL COAX FEEDER CABLE MUST BE GROUNDED WITHIN 10' MAX. (PREFERRED WITH 2"-0") OF CONNECTOR. PROVIDE GROUND BAR AT EACH SECTOR. GRIPSTRUT SHALL BE GROUNDED AT EQUIPMENT END AND ANTENNA END TO GROUND BARS. GRIPSTRUT SHALL BE JUMPED BETWEEN SECTIONS. PROVIDE GROUND KIT AT SHELTER.
- 4. FOR MONOPOLES ALL CABLES SHALL RUN ON INSIDE OF MONOPOLE, CABLE LADDER OR STANDOFFS. PROVIDE CABLE SUPPORTS EVERY 4' FOR 1-5/8" CABLE; EVERY 4' FOR 7/8" CABLE. GROUNDING AS FOLLOWS:
 - KIT AT TOP PRIOR TO TURN DOWN
 - KIT AT BOTTOM BEFORE HORIZONTAL TURN
 - KIT AT EQUIPMENT
 - BOND ICEBRIDGE (TOWER AND EQUIPMENT SIDE)
- 5. ALL SHELTER & ASSOCIATED EQUIPMENT SHALL BE GROUNDED BY EQUIPMENT MANUFACTURER REPRESENTATIVE.

GENERAL NOTES TO ELECTRICAL CONTRACTOR

- 1. THE CONTRACTOR SHALL PROVIDE (FURNISH AND INSTALL) ALL NECESSARY CONDUITS. WIRING AND OUTLET BOXES TO SUPPORT THE AMERICAN TOWER FURNISHED ITEMS.
- 2. PROVIDE WIRING IN CONDUIT IN ACCORDANCE WITH MANUFACTURER'S RECOM-MENDATION AND N.F.C.
- 3. FOR LOCATION OF NEW EQUIPMENT & ANTENNAS. SEE ARCHITECTURAL DWG'S.
- 4. COORDINATE IN ADVANCE ALL WORK TO BE DONE WITH POWER UTILITY CO.
- 5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL CONNECTIONS AND MAKING A COMPLETE OPERATIONAL SYSTEM AS APPROVED BY AMERICAN TOWER
- 6. THE CONTRACTOR SHALL CONFER, COORDINATE, AND COMPLY WITH RECOMMENDATIONS MADE BY THE NEW EQUIPMENT MANUFACTURER'S REPRESENTATIVE
- 7, ELECTRICAL CONTRACTOR TO INCLUDE THE FINAL CONNECTION WORK AND REQUIRED PERMITTING AND INSPECTIONS TO COMPLETE THE POWER AND TELEPHONE CON-NECTION TO EQUIPMENT SHELTER. COORDINATE WITH THE GENERAL CONTRACTOR FOR
- 8. PRIOR TO ANY WORK OR ORDERING OF ANY MATERIALS, THE CONTRACTOR SHALL VERIFY THAT THE EXISTING SERVICE VOLTAGE IS THE SAME VOLTAGE AS SHOWN FOR THE NEW EQUIPMENT. IF THE VOLTAGES ARE THE SAME THE CONTRACTOR MAY PROCEED, IF DIFFERENT, THE CONTRACTOR SHALL NOTIFY AMERICAN TOWER MANAGER IMMEDIATELY AND OBTAIN FURTHER DIRECTION.



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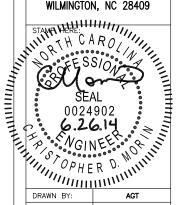
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ELECTRICAL NOTES

REV. #

SHEET NUMBER:

E-11

CUSTOM MODEL

20

1 of 5

ENGINE SPECIFICATIONS

EPA Emissions Compliance

EPA Emissions Reference

Displacement - L (cu. in.)

General

Cylinder #

Bore - mm(in.)

Stroke - mm (in.)

Compression Ratio

Intake Air Method

Cylinder Head Type

CrankshaftType

Engine Block Type

Engine Governing

Lubrication System

Crankcase Capacity - L (gal)(qts)

ALTERNATOR SPECIFICATIONS

Oil Pump Type

Oil Filter Type

Standard Model

Insulation Class - Rotor

Field Type

Closed

Belt Driven Centrifugal

Pusher

2538 (10)

1500

Ultra Low Sulfur Diesel Fuel

ASTM

Standyne

Engine Driven Gear

Mechanical

Direct Injection

1/4 inch Npt

1/4 inch Npt

12VDC

90 Amp

Optima Redtop

Digital

APPROVED CONSTRUCTION PLAN

application and engineering data

Cooling System

Water Pump

Fuel System

Fuel Type

Fan Type

Cooling System Type

Fan Blade Number

Fan Diameter (in.)

Fuel Specifications

Fuel Pump Type

System Voltage

Battery Group

Battery Voltage

Ground Polarity

Injector Type

Engine Type

Fuel Filtering (microns)

Fuel Inject Pump Make

Fuel Supply Line - mm (in.)

Fuel Return Line - mm (in.)

Engine Electrical System

Battery Charging Alternator

Battery Size (at 0 oC)

Voltage Regulator Type

Number of Sensed Phases

PLANNING

Regulation Accuracy (Steady State)

Coolant Heater Wattage

Coolant Heater Standard Voltage

lveco / FPT

Tier III

See Emissions Data Sheet

Diesel

17.5:1

Turbocharged

2 Valve

Aluminum

Forged Steel

Electronic Isochronous

Gear

Full Flow

13.6 (3.6) (14.4)

390

4

Revolving

Cast Iron/Wet Slee

(274)

(4.1)

(5.2)

20

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AMERICAN TOWER



architects engineers

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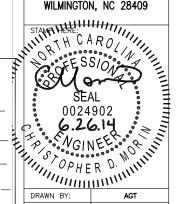
SHEET REVISION NO. DESCRIPTION BY

ATC SITE NUMBER:

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MAC RAE PARK NC

SITE ADDRESS: 4417 LAKE AVE. WILMINGTON, NC 28409



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	DATE DRAWN:	03-24-14
	SUBMISSION:	FINAL CD'S

SHEET TITLE:

PROPOSED 50KW **GENERATOR DETAILS**

SHEET NUMBER:

GEN-1

REV. #

Industrial Diesel Generator Set

EPA Emissions Certification: Tier III

Standby Power Rating 50KW 60 Hz



features

benefits

Generator Set

PROTOTYPE & TORSIONALLY TESTED

UL2200 TESTED

RHINOCOAT PAINT SYSTEM

SOUND LEVEL 2 ENCLOSURE

IMPROVES RESISTANCE TO ELEMENTS 71dbA @ 7 METERS (23FT)

PROVIDES A PROVEN UNIT

ENSURES A QUALITY PRODUCT

ENGINEERED FOR PERFORMANCE

EPA TIER CERTIFIED

INDUSTRIAL TESTED, GENERAC APPROVED

POWER-MATCHED OUTPUT

INDUSTRIAL GRADE

ENVIRONMENTALLY FRIENDLY **ENSURES INDUSTRIAL STANDARDS**

IMPROVES LONGEVITY AND RELIABILITY

TWO-THIRDS PITCH

LAYER WOUND ROTOR & STATOR

CLASS H MATERIALS

DIGITAL 3-PHASE VOLTAGE CONTROL

ELIMINATES HARMFUL 3RD HARMONIC

IMPROVES COOLING

HEAT TOLERANT DESIGN

FAST AND ACCURATE RESPONSE

EASY, AFFORDABLE REPLACEMENT

ENCAPSULATED BOARD W/ SEALED HARNESS

ADVANCED DIAGNOSTICS & COMMUNICATIONS

4-20mA VOLTAGE-TO-CURRENT SENSORS

SURFACE-MOUNT TECHNOLOGY

NOISE RESISTANT 24/7 MONITORING

▶ PROVIDES VIBRATION RESISTANCE

► HARDENED RELIABILITY

primary codes and standards











msulation Cass - Stato	1.1
Total Harmonic Distortion	< 3.5%
Telephone Interference Factor (TIF)	< 50
Standard Excitation	PMG
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Load Capacity - Standby	100%
Load Capacity - Prime	100%
Prototype Short Circuit Test	Y

CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

NFPA 99 NFPA 110 ISO 8528-5 ISO 1708A.5 ISO 3046

BS5514 SAE J1349 DIN6271 IEEE C62.41 TESTING

NEMA ICS 1

Standby – Applicable for a varying emergency load for the duration of a utility power outage with no overload capable.

Prime – Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (A

Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED

Signed:

50KW GENERATOR SPECIFICATIONS

N.T.S.

Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED

Signed: __

GENERAC' INDUSTRIAL SD050 standard features and options CONTROL SYSTEM **GENERATOR SET** Control Panel
Digital H Control Panel - Dual 4x20 Display
Programmable Crank Limiter
7-Day Programmable Exerciser (requires H-Transfer Switch)
Special Applications Programmable PLC Genset Vibration Isolation note Emergency Shutdown All-Phase Sensing DVR Full System Status

Unitiny Monitoring (Req. H-Transfer Switch)

2-Wire Start Compatible

Power Output (WV)

Power Factor

Reactive Power

A Shape of Violence ENGINE SYSTEM General

Oil Drain Extension Air Cleaner
 Industrial Exhaust Silencer (Open Sets , ship loose) All phase AC Voltage Critical Exhaust Silencer (Enclosed Sets)
 Stainless steel flexible exhaust connection All phase Currents Oil Pressure Dil Pressure
Coolant Temperature
Coolant Level
Low Fuel Pressure Indication
Engine Speed
Battery Voltage UL2200 GENprotect*
 Low-Speed Exercise -40deg C - 70deg C Operation Cooline System

120VAC Coolant Heater (3-wire connection cord)

50%/50% Coolant leather Resistant Electrical Connections Audible Alarms and Shutdowns Audible Alarms and Stutdowns
Not in Auto (Flashling Light)
On/Off/Manual Switco
E-Stop (Red Mushroom-Type)
Remote E-Stop (Red Mushroom-Type, Surface Mount)
Remote E-Stop (Red Mushroom-Type, Surface Mount)
Remote E-Stop (Red Mushroom-Type, Flush Mount)
NFPA 110 Level I and ill (Programmable)
Remote Communication - RSZ32 509/50% Coolant
Level 1 Guarding (Open Sets)
Closed Coolant Recovery System
UV/Ozone resistant hoses
Factory-Installed Radiator
Radiator Drain Extension Fan guard
 Radiator duct adapter (Open Sets) Engine Electrical System Battery charging alternator
 Battery cables Battery tray
 75W 120VAC Battery heater 75W 120WL battery neare:
 Solenoid activated starter motor
 10A ULfloat/equalize battery charger
 Weather Resistant electrical connectic
 Duplex GFCI Convenience Outlet Low Fuel
Oil Pressure (Pre-programmed Low Pressure Shutdown)
Coolant Temperature (Pre-programmed High Temp Shutdo
Coolant Level (Pre-programmed Low Level Shutdown) ■ Engine Speed (Pre-programmed Overspeed Shutdown) ALTERNATOR SYSTEM UL2200 GENprotect*

100% Rated 200A Main Line Circuit Breaker

20

SD050		GENERAC INDUSTRIAL dimensions, weights and sound levels
	H	OPEN SET SUNTINE CAPACITY TANK HOURS GALL VOLUME W H WT 65A* O
L	W	TAIL COURT TAI
	[YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

APPROVED CONSTRUCTION PLAN NAME DATE PLANNING_ TRAFFIC_

		GENERAC INDUSTRIAL
50		operating data (60Hz)
POWER RATINGS (kW)		
	STANDBY	· ·
Single-Phase 120/240VAC @1.0pf	50 Amps: 208	
Three-Phase 120/208VAC @0.8pf	- Amps: +	
Three-Phase 120/240VAC @0.8pf	- Amps: -	
Three-Phase 277/480VAC @0.8pf	- Amps: -	
Three-Phase 346/600VAC @0.8pf	- Amps: -	
	NOTE: Generator output limited to 290A.	
STARTING CAPABILITIES (SKVA)		

	Standard	30			1		100	40	33	34	0.0	1.1	30
	Upsize 1		1.20	3							-		11 .
Г	Upsize 2		100			+ :	14			+ .			
EL		*All General in temperature ri			ass Minsulation materials in energial	Standard alternati	or provides less	tian or squals	a Class & temp	erature rise. Us	owns I previde	is less than or e	qual to Class
_					Fue	Consumptio	n Rates						
	Fuel Pump Lift	- in (m)			-	ANDSY							
Г	Fuel Pump Lift 36(.9)				-	95305A3	lph						
					5	ANDSY		1					
					S Percent Load	ANDBY gph	lph]					
					Percent Load 25%	gph 1.52	lph 5.75						

Coolant System Capacity - Gal (L)	72		STANDBY
4.5 (17.44)	Coolant Flow per Minute	gpm (lpm)	32.7(123.8)
	Heat rejection to Coolant	BTU/min	123,000
Maximum Radiator Backpressure	Inlet Air	dm (m3/min)	6,360 (180.0)
1.5" H ₂ O Column	Max. Operating Radiator Air Temp	F" (C")	122(50)
	Max. Operating Ambient Temperature	F°(C')	122(50)

COMBUSTION AIR REQUIREMENT	rs		
		STA	4DBY
Intake Flow at Rated Power	cfm (m3/min)	247	{7.00}

Exhaust Outlet Size (Open Set)			STANDBY
3.0"	Exhaust Flow (Rated Output)	cfm (m3/hr)	534(906.7)
Maximum Backpressure (Post-Silencer)	Maximum Backpressure	inHg (Kpa)	1.5 (5.1)
1.5" Hg	Exhaust Temp (Rated Output)	°F(°C)	930(498.8

		STANDBY
Rated Engine Speed	rpm	1800
Horsepower at Rated kW	hp	93
Temperature Deration		Consult Factory
Altitude Deration	4	Consult Factory

Detailon – Operational characteristics consider maximum ambient conditions, Details factors may apply under attypica site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, 855514, ISO8528 and DIN6271 standards.

AMERICAN TOWER

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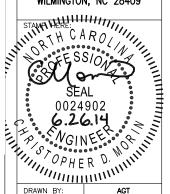
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PROPOSED 50KW **GENERATOR** DETAILS

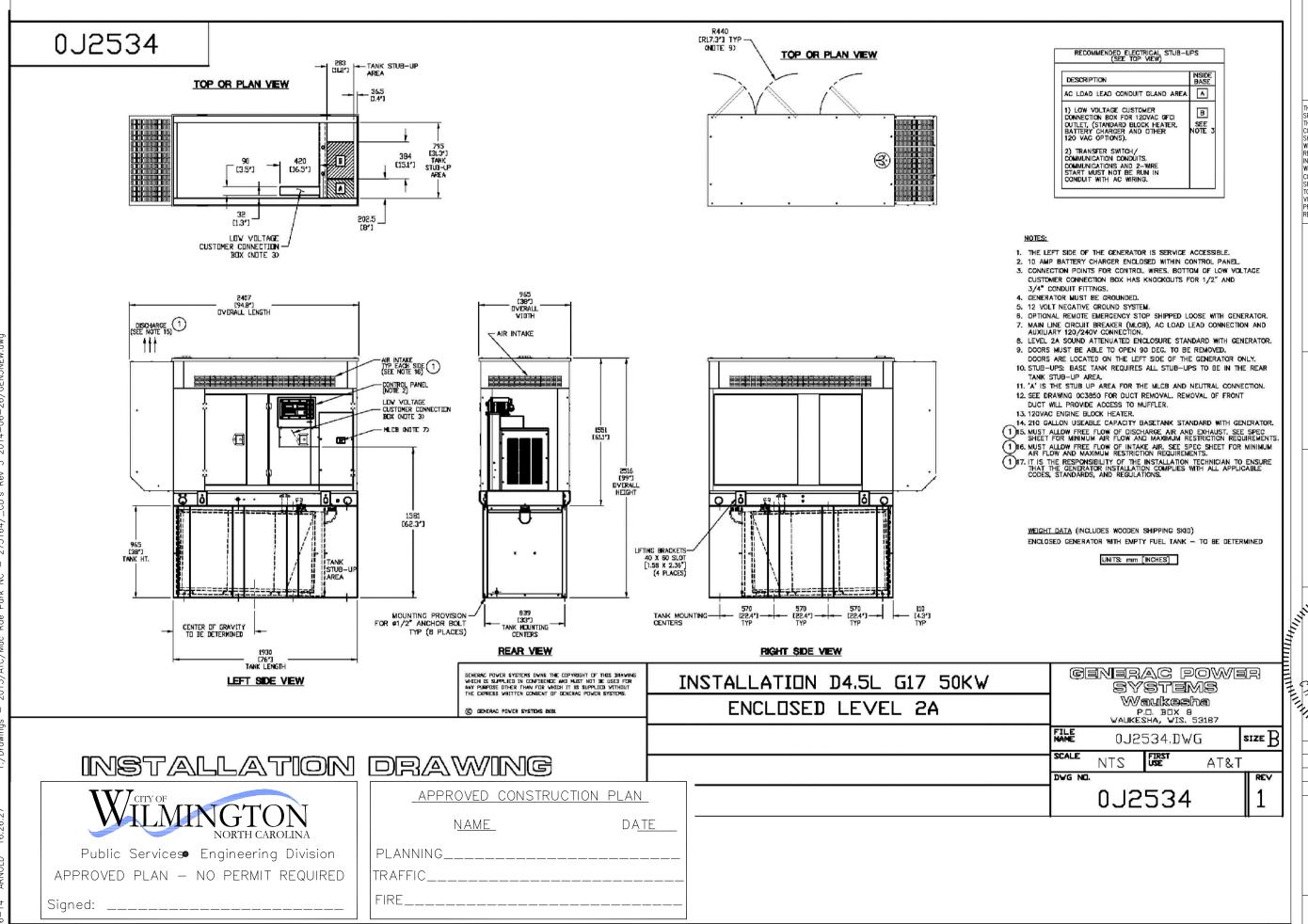
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SHEET NUMBER:

GEN-2

urpoxes only. Please consult a General Power Systems Industrial Devier for detailed installation drawings

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50KW GENERATOR INSTALLATION DRAWING

N.T.S.

A MATRICAN TO

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e n g i n e e r s 5661 COLUMBIA PIKE, SUITE 200

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PROPOSED 50KW GENERATOR DETAILS

REV. #

SHEET NUMBER:

GEN-3

APPROVED CONSTRUCTION PLAN

NAME

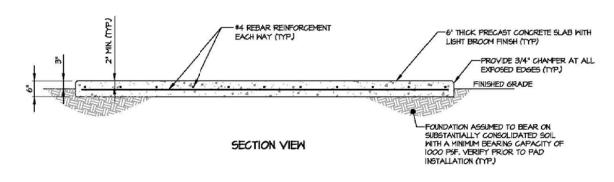
DATE

Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED

Signed: _____

PLANNING_ TRAFFIC

#4 REBAR REINFORCEMENT EACH WAY (TYP) 10'-0" (11) #4 REBAR 1-9" II.2" x 23.1" KNOCK-OUT IN SLAB FOR CONDUIT STUB-UP CONDUIT ENTRY AREA FOR ENERATOR LOAD LEADS FRONT OF GENERATOR THIS SIDE A-PLAN VIEW



MONOLITHIC GENERATOR SLAB DETAIL

LIFTING NOTE: THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF EMBEDDED HOISTING HOOKS OR REBAR AS REQUIRED PRIOR TO FABRICATION.

REINFORCED CONCRETE NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN & CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- SITECAST CONCRETE FOR SLABS AND POST FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, CONCRETE TESTING IS NOT REQUIRED FOR SLABS AND POST FOOTINGS UNLESS NOTED OTHERWISE.

SLUMP - 4' MIN. / 6" MAX. AIR ENTRAINMENT - 2% TO 3% BY VOLUME

CLASSES OF CONCRETE

CLASS	28 DAY STRENGTH (PSI)	MAX WATER/CEMENT RATIO	PLACEMENT LOCATION	NOTES
TYPE I	3000	055	SLABS & FOOTINGS	NORMAL MEIGHT
TYPE III*	5000	0.45	SLABS & FOOTINGS	HIGH EARLY STRENGTH

- * IF REQUIRED BY THE CONSTRUCTION SCHEDULE THE CONTRACTOR MAY SUBSTITUTE TYPE III HIGH EARLY STRENGTH CONCRETE WITH THE APPROVAL OF THE CONSTRUCTION MANAGER.
- . REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES FOR REBAR SHALL BE CLASS "3" AND ALL HOOKS SHALL BE STANDARD, UND. LAPS FOR WELDED WIRE FABRIC SHALL BE AT LEAST & INCHES, UNO
- 4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

CONCRETE CAST AGAINST EARTH	
CONCRETE EXPOSED TO EARTH OR WEATHER	3
#6 AND LARGER	2"
#5 AND SMALLER & W.W.F	

- 6. MAXIMUM COARSE AGGREGATE SIZE SHALL BE 3/4".
- INSTALLATION OF CONCRETE ANCHORS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO THE ANCHOR MANUFACTURER'S SPECIFICATIONS FOR MATERIAL STRENGTH, EMBEDMENT DEPTH, SPACING, AND EDGE DISTANCE OR AS DETAILED ON THE DRAWINGS, NO REBAR SHALL BE CIT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE, EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD, HILTI, OR APPROVED EQUAL. IF THE MANUFACTURER'S SPECIFICATIONS AND DETAILS ARE FOUND TO CONFLICT WITH THAT SHOWN HEREIN, THE ENGINEER SHALL BE NOTIFED
- 8. THE CONTRACTOR SHALL VERIFY FROST LINE AND FOOTING DEPTH REQUIREMENTS WITH THE JURISDICTION HAVING AUTHORITY PRIOR TO
- MECHANICAL VIBRATION IS REQUIRED ON ALL SLABS TO REDUCE THE HONEYCOMB EFFECT UNLESS DIRECTED BY THE CONSTRUCTION MANAGER.
- IO. THE CONTRACTOR SHALL VERIFY ALL ELECTRICAL CONDUIT SIZES AND PENETRATION LOCATIONS PRIOR TO POURING THE SLAB.

30 MANSELL CT SUITE 103 ROSWHLL, GA 30076 678-280-2325

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GENERATOR INDATION DETA

DESIGNED: DCC CHECKED: PWM

JOB #: WTCIOO C-11

PMA

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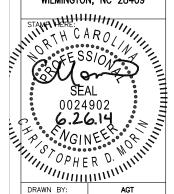
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SHEET TITLE:

PROPOSED 50KW **GENERATOR DETAILS**

REV. #

SHEET NUMBER:

GEN-4

N.T.S.

Public Services Engineering Division APPROVED PLAN - NO PERMIT REQUIRED Signed: _____

APPROVED CONSTRUCTION PL	AN
NAME	<u>DA</u> TE
PLANNING	
TRAFFIC	
TRE	

1.1 PURPOSE AND INTENT

- A. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY, HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED. OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH. SHOULD THERE BE ANY DISCREPANCIES BETWEEN REQUIREMENTS SHOWN IN BOTH, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.
- B. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT

1.2 CONFLICTS

- A. VERIFY ALL MEASUREMENTS AT THE SITE BEFORE ORDERING MATERIAL OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED DUE TO DIFFERENCES BETWEEN ACTUAL DIMENSIONS OR DIMENSIONS SHOWN ON PLANS. SUBMIT NOTICE OF ANY DISCREPANCY IN DIMENSIONS OR OTHERWISE TO AMERICAN TOWER CO. FOR RESOLUTION BEFORE PROCEEDING WITH THE WORK.
- B. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OF CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONSTRUTION DOCUMENTS GOVERNING THE WORK.

1.3 CLEANING

KEEP THE SITE FREE FROM ACCUMULATION OF WASTE AND RUBBISH CAUSED BY FMPLOYFFS. AT THE COMPLETION OF THE WORK, REMOVE ALL WASTE AND NON-CONSTRUCTION MATERIAL, INCLUDING ALL CONTRACTOR TOOLS, SCAFFOLDING, AND SURPLUS MATERIAL AND LEAVE SITE CLEAN AND READY FOR USE

CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL LAWS, REGULATIONS, AND RULES PROMULGATED BY FEDERAL STATE AND LOCAL AUTHORITIES WITH JURISDICTION OVER THE SITE. THIS RESPONSIBILITY IS IN EFFECT REGARDLESS OF WHETHER THE LAW, ORDINANCE, REGULATION OR RULE IS MENTIONED IN THESE

1.5 LICENSING

HAVE AND MAINTAIN A VALID CONTRACTOR'S LICENSE FOR THE LOCATION IN WHICH THE WORK IS TO BE PERFORMED. FOR JURISDICTIONS THAT LICENSE INDIVIDUAL TRADES, THE TRADESMAN OR SUBCONTRACTOR'S PERFORMING THOSE TRADES SHALL BE LICENSED. RESEARCH AND COMPLY WITH LICENSING LAWS. PAY LICENSE FEES, AND SELECT AND INFORM SUBCONTRACTORS REGARDING THESE LAWS.

1.6 OSHA

FOLLOW ALL APPLICABLE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATIONS, AND STATE LAWS BASED IN THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT. THESE REGULATIONS INCLUDE, BUT ARE NOT LIMITED TO, REGULATIONS DEALING WITH TOWER CONSTRUCTION AND SAFETY, EXCAVATIONS AND TRENCHING, AND WORK IN CONFINED SPACES. ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES DURING CONSTRUCTION. GC SHALL INSURE ALL CLIMBERS MAINTAIN 100% FALL PROTECTION AT ALL TIMES & BE ABLE TO SHOW ALL CLIMBERS HAVE COMPLETED CLIMBING SAFETY TRAINING AND TOWER RESCUE COURSE

PROVIDE PHOTOGRAPHIC EVIDENCE OF ALL FOUNDATION INSTALLATION, GROUNDING, AND TRENCHING AFTER PLACEMENT OF UTILITIES PRIOR TO BACKFILL.

1.8 BUILDING PERMITS

AMERICAN TOWER CO. WILL SUBMIT CONSTRUCTION DOCUMENTS TO THE JURISDICTIONAL AUTHORITY FOR PLAN CHECK AND REVIEW, CONTRACTOR WILL SUBMIT LICENSING AND WORKMAN'S COMPENSATION INFORMATION TO THE JURISDICTION AS REQUIRED TO OBTAIN THE BUILDING PERMIT. CONTRACTOR SHALL COORDINATE AND SCHEDULE REQUIRED INSPECTIONS AND POST REQUIRED PERMITS AT THE JOB SITE. COMPLY WITH SPECIFIC PROJECT-RELATED REQUESTS AND SUGGESTIONS MADE BY BUILDING INSPECTOR, AND INFORM CONSTRUCTION MANAGER OF ANY SUCH WORK THAT MAY MAY BE BEYOND THE SCOPE OF THE CONTRACT OR DEVIATE FROM THE CONSTRUCTION DOCUMENTS, AMERICAN TOWER CO. WILL REIMBURSE THE CONTRACTOR FOR FEES, FOR PLAN REVIEW, BUILDING PERMIT, CONNECTIONS, AND INSPECTION.

1.9 ZONING REGULATIONS AND CONDITIONAL USE PERMITS

AMERICAN TOWER CO. WILL SUBMIT FOR AND OBTAIN ALL ZONING AND CONDITIONAL USE PERMITS. SOME USE PERMITS MAY HAVE SPECIFIC REQUIREMENTS FOR THE SITE RELATED TO CONSTRUCTION, SUCH AS NOISE REGULATIONS, HOURS OF WORK, ACCESS LIMITATIONS, ETC., THE CONSTRUCTION MANAGER WILL INFORM THE CONTRACTOR OF THESE REQUIREMENTS AT THE PRE-BID MEETING OR AS SHOWN IN CONSTRUCTION DOCUMENTS.

1 10 FAA PERMIT AND TOWER LIGHTING

REFER TO CONSTRUCTION DOCUMENTS AND CONSTRUCTION MANAGER FOR FAA AND STATE LIGHTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TEMPORARY FAA APPROVED LIGHTING UNTIL PERMANENT LIGHTING IS OPERATIONAL

1.11 TOWER SECURITY

TOWER MUST BE FENCED, TEMPORARILY OR PERMANENTLY WITHIN 24 HOURS OF ERECTION. DO NOT ALLOW THE GATE ACCESSING THE TOWER AREA TO REMAIN OPEN OR UNATTENDED AT ANY TIME FOR ANY REASON. KEEP THE GATE CLOSED AND LOCKED WHEN NOT IN USE.

1.12 SITE CONTROL

- A. THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR CONTAINMENT OF SEDIMENT AND CONTROL OF EROSION AT THE SITE. ANY DAMAGE TO ADJACENT OR DOWNSTREAM PROPERTIES WILL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO AMERICAN TOWER CO.
- B. THE CONTRACTOR IS TO MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES DO NOT ALLOW WATER TO STAND OR POND. ANY DAMAGE TO STRUCTURES OR WORK ON THE SITE CAUSED BY INADEQUATE MAINTENANCE OF DRAINAGE PROVISIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND ANY COST ASSOCIATED WITH REPAIRS FOR SUCH DAMAGE WILL BE AT THE CONTRACTOR'S EXPENSE
- C. ALL WASTE MATERIAL SHALL BE PROPERLY DISPOSED OF OFF-SITE OR AS DIRECTED BY THE CONSTRUCTION MANAGER AND IN ACCORDANCE WITH JURISDICTIONAL AUTHORITIES.

2.1 SCOPE OF WORK INCLUDES:

- A. PROTECTION OF EXISTING TREES, VEGETATION AND LANDSCAPING MATERIALS WHICH MIGHT BE DAMAGED BY CONSTRUCTION ACTIVITIES.
- B. TRIMMING OF EXISTING TREES AND VEGETATION AS REQUIRED FOR PROTECTION DURING CONSTRUCTION ACTIVITIES.
- C. CLEARING AND GRUBBING OF STUMPS, VEGETATION, DEBRIS, RUBBISH, DESIGNATED TREES, AND SITE IMPROVEMENTS.
- D. TOPSOIL STRIPPING AND STOCKPILING
- E. TEMPORARY EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL CONFORMING TO LOCAL REQUIREMENTS AS APPLICABLE.
- F. TEMPORARY PROTECTION OF ADJACENT PROPERTY, STRUCTURES, BENCHMARKS, AND MONUMENTS
- G. PROTECTION AND TEMPORARY RELOCATION, STORAGE AND RE-INSTALLATION OF EXISTING FENCING AND OTHER SITE IMPROVEMENTS SCHEDULED FOR REUSE.
- H. REMOVAL AND LEGAL DISPOSAL OF CLEARED MATERIALS.

2.2 PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS.)

A. MATERIALS USED FOR TREE PROTECTION, EROSION CONTROL, SILTATION CONTROL, AND DUST CONTROL AS SUITABLE FOR SPECIFIC SITE CONDITIONS.

3.1 SCOPE OF WORK INCLUDES:

- A. EXCAVATION, TRENCHING, FILLING, COMPACTION, AND GRADING FOR STRUCTURES, SITE IMPROVEMENTS, AND UTILITIES.
- B. MATERIALS FOR SUB-BASE, DRAINAGE FILL, FILL, BACKFILL, AND GRAVEL FOR SLABS, PAVEMENTS, AND IMPROVEMENTS.
- C. ROCK EXCAVATION WITHOUT BLASTING.
- D. SUPPLY OF ADDITIONAL MATERIALS FROM OFFSITE AS REQUIRED
- E. REMOVAL AND LEGAL DISPOSAL OF EXCAVATED MATERIALS AS REQUIRED.

3.2 QUALITY ASSURANCE

A. COMPACTION:

- 1. UNDER STRUCTURES, BUILDING SLABS, PAVEMENTS, AND WALKWAYS WILL OBTAIN A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.
- B. GRADING TOLERANCES OUTSIDE BUILDING LINES:
- 1. LAWNS, UNPAVED AREAS, AND WALKS, PLUS OR MINUS 1 INCH. 2. UNDER PAVEMENTS, PLUS OR MINUS 1/2 INCH.
- C. GRADING TOLERANCE FOR FILL UNDER ALL CONCRETE APPLICATIONS: PLUS OR MINUS 1/2 INCH MEASURED WITH 10 FOOT STRAIGHTEDGE.
- 3.3 PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS NOTED IN CONSTRUCTION DOCUMENTS.)
- A. SUBBASE MATERIAL: GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE OR SLAG, AND NATURAL SAND.
- B. WASHED MATERIAL, EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, WITH 95 PERCENT PASSING A 11/2 INCH SIEVE.
- C. GRADING MATERIAL WILL CONSIST OF: SATISFACTORY NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL NOT LARGER THAN 2 INCHES IN ANY DIMENSION. DEBRIS, WASTE, FROZEN MATERIALS, AND OTHER UNUSUITABLE MATERIALS WILL NOT BE ALLOWED FOR USE. IMPORTED MATERIALS SHALL HAVE A CLAY CONTENT NO MORE THAN 5
- D. BACKFILL MATERIALS WILL CONSIST OF: SATISFACTORY NON-COHESIVE NATIVE OR IMPORTED SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL NOT LARGER THAN 4 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, AND OTHER UNSUITABLE MATERIALS. IMPORTED MATERIAL SHALL HAVE A CLAY CONTENT OF NO MORE THAN 5 PERCENT.
- E. GRAVEL MATERIAL: EVENLY GRADED MIXTURE OF CRUSHED STONE OR GRAVEL, WITH 95 PERCENT PASSING A 11/2 INCH SIEVE.
- F. GEOTEXTILE FABRIC: AS PER CONSTRUCTION DOCUMENTS.

3.4 CLEARING AND GRUBBING

REMOVE ALL VEGETATION AND MATERIALS AS REQUIRED. REMOVE STUMPS COMPLETELY UNDER FOUNDATIONS AND ROADWAY. DISPOSE OF CLEARING AND GRUBBING OFF-SITE, OR IN AN ON-SITE LOCATION APPROVED BY CONSTRUCTION MANAGER

3.5 STRIPPING

STRIP NOT LESS THAN 3 INCHES OF SOD AND TOPSOIL FROM AREAS THAT WILL LINDERLAY GRAVEL PAVEMENT NEW STRUCTURES OR NEW EMBANKMENTS. STOCKPILE STRIPPING ON-SITE FOR RE-USE IN FINAL LANDSCAPING.

3.6 COMMON EXCAVATION

1. EXCAVATE TO DEPTH, LINES, AND GRADES SHOWN ON THE PLANS OR AS OTHERWISE SPECIFIED

- 2. TEMPORARILY STOCKPILE ON-SITE EXCAVATION AT AN APPROVED LOCATION WITHIN THE WORK AREA UNTIL SITE GRADING IS COMPLETE. STOCKPILE SHALL NOT EXCEED 15 FEET IN HEIGHT
- 3. LEGALLY DISPOSE OF EXCESS COMMON EXCAVATION OFF-SITE.

- A. CONSTRUCT EMBANKMENT TO THE LINES AND GRADE SHOWN ON THE DRAWINGS.
- B. CONSTRUCT EMBANKMENT FROM ON-SITE EXCAVATION MATERIALS WHEN SUITABLE. USE IMPORTED BACKFILL ONLY AFTER AVAILABLE ON-SITE EXCAVATION MATERIALS HAVE BEEN USED
- C. CONSTRUCT IN LIFTS OF NOT MORE THAN 12 INCHES IN LOOSE DEPTH. THE FULL WIDTH OF THE CROSS SECTION SHALL BE BROUGHT UP UNIFORMLY.
- D. MATERIAL SHALL NOT BE PLACED IN LAYERS AND SHALL BE NEAR OPTIMUM MOISTURE CONTENT BEFORE ROLLING TO OBTAIN THE PRESCRIBED COMPACTION. WETTING OR DRYING OF THE MATERIAL AND MANIPULATION TO SECURE A UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYER MAY BE REQUIRED. SUCH OPERATIONS SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM. SHOULD THE MATERIAL BE TOO WET TO PERMIT PROPER COMPACTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE MATERIAL WITH AN ACCEPTABLE MOISTURE CONTENT.
- E. DO NOT PLACE FROZEN MATERIAL IN THE EMBANKMENT, AND DO NOT PLACE EMBANKMENT MATERIAL UPON FROZEN MATERIAL
- F. CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND THE REPLACEMENT OF ANY PORTION WHICH HAS BECOME DISPLACED DUE TO THE CONTRACTOR'S OPERATIONS
- G START LAYERS IN THE DEEPEST PORTION OF THE FILL AND AS PLACEMENT PROGRESSES, CONSTRUCT LAYERS APPROXIMATELY PARALLEL TO THE FINISHED
- H. ROUTE EQUIPMENT, BOTH LOADED AND EMPTY, OVER THE FULL WIDTH OF EMBANKMENT TO ENSURE UNIFORMITY OF MATERIAL PLACEMENT
- I. COMPACT EMBANKMENT UNDERLYING NEW GRAVEL PAVING, FLOOR SLABS. AND STRUCTURES TO A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT. COMPACT NON-STRUCTURAL AREA FMBANKMENTS TO A MINIMUM OF 90% OF ASTM D-1557

- A. USING ON-SITE EXCAVATION MATERIALS, SHAPE, TRIM, FINISH, AND COMPACT SURFACE AREAS TO CONFORM TO THE LINES, GRADES, AND CROSS SECTIONS SHOWN ON THE DRAWINGS OR AS DESIGNATED BY THE CONSTRUCTION MANAGER
- B. GRADE SURFACES TO DRAIN AND ELIMINATE ANY PONDING OR EROSION.
- C. FLIMINATE WHEFI RUTS BY REGRADING.
- D. COMPACT AREAS UNDERLYING NEW GRAVEL, PAVING, FLOOR SLABS, AND STRUCTURES TO A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.
- E. CONSTRUCT FINISHED SURFACE OF SITE GRADING AREAS WITHIN ONE INCH FROM SPECIFIED GRADE.

3.9 SUBGRADE PREPARATION

- A. SHAPE TOP OF SUBGRADE TO THE LINES AND GRADES SHOWN ON THE
- B. MAINTAIN TOP OF SUBGRADE IN A FREE-DRAINING CONDITION.
- C. DO NOT STOCKPILE MATERIALS ON TOP OF SUBGRADE UNLESS AUTHORIZED BY CONSTRUCTION MANAGER
- D. COMPACT THE TOP 12 INCHES OF SUBGRADE TO A 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.
- F. CONSTRUCT TOP OF SUBGRADE WITHIN ONE INCH OF FSTABLISHED GRADE AND CROSS-SECTION.

3.10 GEOTEXTILE FABRIC

A. LAY GEOTEXTILE FABRIC OVER COMPACTED SUBGRADE AS PER CONSTRUCTION DOCUMENTS IN THE COMPOUND AREA AND UNDER LENGTH OF ROAD (WHEN REQUIRED). LAP ALL JOINTS TO A MINIMUM OF 36 INCHES.

3.11 GRAVEL SURFACING

- A. CONSTRUCT GRAVEL SURFACING AREAS USING CRUSHED AGGREGATE BASE AND FINISH COURSES AS SPECIFIED BY CONSTRUCTION MANAGER OR CONSTRUCTION DOCUMENTS.
- B. SPREAD GRAVEL AND RAKE TO OBTAIN A UNIFORM SURFACE AREA.

FILL MATERIAL SHALL BE OBTAINED, WHEN POSSIBLE, FROM MATERIALS EXCAVATED FROM TRENCHS ON-SITE. STRUCTURAL FILL, SAND OR SLURRY SHALL BE APPROVED BY THE CONSTRUCTION MANAGER AND SHALL CONFORM TO LOCAL GOVERNING JURISDICTIONS AND UTILITY COMPANY REQUIREMENTS. THE FILL MATERIAL SHALL CONTAIN NO ORGANIC MATERIAL OR ROCKS, NOR SHALL CONTAIN OBJECTIONABLE MATERIALS AND/OR MATERIALS DESIGNATED AS HAZARDOUS OR INDUSTRIAL BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THE FILL MATERIAL SHALL CONTAIN FINES SUFFICIENT TO FILL ALL VOIDS IN THE MATERIAL. COMPACTION OF BACKFILL OR BORROW SOIL SHALL BE PLACED IN 12 INCH LOOSE LIFTS WHEN UTILIZING HEAVY COMPACTION EQUIPMENT OR 6 INCH LOOSE LIFTS WHEN UTILIZING HAND OPERATED



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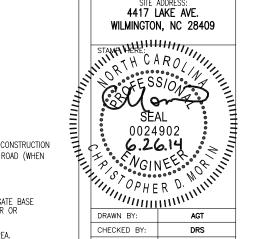
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4.3 TRENCH EXCAVATION

- A. DIG TRENCH TO LINES AND GRADES SHOWN ON THE PLANS OR AS DIRECTED BY CONSTRUCTION
- B. TRENCH LENGTH SHALL BE SUFFICIENT TO ALLOW FOR SATISFACTORY CONSTRUCTION AND INSPECTION OF THE PROJECT, WITHOUT ENDANGERING OTHER CONSTRUCTION WORK OR ADJACENT
- C. DISPOSE OF EXCESS AND UNSUITABLE EXCAVATION MATERIAL PROPERLY, AS DIRECTED BY
- D. USE HAND METHODS FOR EXCAVATION THAT CANNOT BE ACCOMPLISHED WITHOUT ENDANGERING EXISTING OR NEW STRUCTURES OR OTHER FACILITIES.

4.4 TRENCH PROTECTION

- A. PROVIDE MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO PROTECT TRENCHES AT ALL TIMES.
- B. SHEETING AND BRACING: MEET OR EXCEED OSHA REQUIREMENTS.

4.5 BACKFILLING

- A. NOTIFY THE CONSTRUCTION MANAGER AT LEAST 24 HOURS IN ADVANCE OF BACKFILLING.
- B. BACKFILL TRENCH WITH LIFTS UP TO 12 INCHES, LOOSE MEASURE.
- C. PROTECT CONDUIT FROM LATERAL MOVEMENT, DAMAGE FROM IMPACT, OR UNBALANCED LOADING TO AVOID DISPLACEMENT OF CONDUIT AND/OR STRUCTURES. DO NOT FREE FALL BACKFILL INTO TRENCH UNTIL AT LEAST 12 INCHES OF COVER IS OVER THE CONDUIT.

4.6 COMPACTION

- A. COMPACT BACKFILL TO A 95 PERCENT COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3 PERCENT OF OPTIMUM MOISTURE CONTENT.
- B IF REQUIRED COMPACTION DENSITY HAS NOT BEEN OBTAINED REMOVE THE BACKELL FROM THE TRENCH OR STRUCTURE, REPLACE WITH APPROVED BACKFILL, AND RECOMPACT AS SPECIFIED.
- C ANY SUBSECUENT SETTLEMENT OF TRENCH OR STRUCTURE BACKELL DURING MAINTENANCE PERIOD SHALL BE CONSIDERED THE RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY

5.0 CHAIN LINK FENCES AND GATES

5.1 GENERAL

- A. PROVIDE CHAIN LINK FENCES AND GATES AS COMPLETE UNITS BY A SINGLE SUPPLY SOURCE INCLUDING NECESSARY ERECTION ACCESSORIES, FITTINGS, AND FASTENERS.
- 5.2 PRODUCTS AND MATERIALS (AS APPROVED BY CONSTRUCTION MANAGER OR AS WITHIN CONSTRUCTION DOCUMENTS.)
 - A. COMPOUND FABRIC 72 INCHES HIGH AND OVER WITH 2-INCH MESH SHALL BE KNUCKLED AT ONE SELVAGE AND TWISTED AT THE OTHER.

COMPLY WITH CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL. FURNISH ONE PIECE OF FABRIC WIDTHS. WIRE SIZE INCLUDES ZINC OR ALUMINUM COATING.

- 1. SIZE: 2-INCH MESH, 9 GAUGE (0.148-INCH DIAMETER) WIRE.
- 2. GALVANIZED STEEL FINISH: ASTM A 392, CLASS 2, WITH A MINIMUM 2.0 OZ. ZINC PER SQ. FT. OF UNCOATED WIRE SURFACE.

C. FRAMEWORK AND ACCESSORIES:

- 1. GENERAL REQUIREMENTS: EXCEPT AS INDICATED OTHERWISE, CONFORM TO THE CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI) PRODUCT MANUAL, INDUSTRIAL STEEL GUIDE FOR FENCE RAILS, POSTS, GATES AND ACCESSORIES, INCLUDING TABLE II.
- 2. STRENGTH REQUIREMENTS FOR POSTS AND RAILS CONFORMING TO ASTM F 669.
- 3. TYPE 1 PIPE: HOT-DIPPED GALVANIZED STEEL PIPE CONFORMING TO ASTM F 1083, PLANE ENDS, STANDARD WEIGHT (SCHEDULE 40) WITH NOT LESS THAN 1.8 OZ. ZINC PER SQ. FT.
- 4. FITTINGS: COMPLY WITH ASTM F 626. MILL FINISHED ALUMINUM OR GALVANIZED IRON STEEL, TO SUIT MANUFACTURER'S STANDARDS.
- 5. TOP RAIL: MANUFACTURER'S LONGEST LENGTHS, WITH EXPANSION TYPE COUPLINGS, APPROXIMATELY 6 INCHES LONG, FOR EACH JOINT, PROVIDE MEANS FOR ATTACHING TOP RAIL SECURELY TO EACH GATE CORNER, PULL AND END POST.
- A. GALVANIZED STEEL: 11/4 INCH NPS (1.66 INCH OD) TYPE I OR II. STEEL PIPE OR 1.625 INCH X 1.25 INCH ROLL-FORMED C SECTIONS WEIGHTING 1.35 LBS.

D. SWING GATES:

COMPLY WITH ASTM F 9000. PROVIDE HARDWARE AND ACCESSORIES FOR EACH GATE, GALVANIZED PER ASTM A 153, AND IN ACCORDANCE WITH THE FOLLOWING:

- 1. HINGES: NON-LIFT-OFF TYPE, OFFSET TO PERMIT 180 DEG. GATE OPENING.
- 2. LATCH: MTS "MULTI-LOCKING DEVICE" #C-6477 OR APPROVED EQUAL.

- 3. KEEPER: PROVIDE KEEPER FOR VEHICLE GATES, WHICH AUTOMATICALLY INGAGES GATE LEAF AND HOLDS IT IN OPEN POSITION UNTIL MANUALLY RELEASED
- 4. GATE STOPS: PROVIDE GATE STOPS FOR DOUBLE GATES, CONSISTING OF MUSHROOM TYPE FLUSH PLATE WITH ANCHORS, SET IN CONCRETE, AND DESIGNED TO ENGAGE

F. CONCRETE

PROVIDE CONCRETE CONSISTING OF PORTLAND CEMENT, ASTM C 150, AGGREGATES ASTM C 33, AND CLEAN WATER. MIX MATERIALS TO OBTAIN CONCRETE WITH A MINIMUM OF 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.

6.0 LANDSCAPING

A. FURNISH, INSTALL AND MAINTAIN LANDSCAPE WORK AS SHOWN AND OR REQUIRED WITHIN THE CONSTRUCTION DOCUMENTS OR AS SPECIFIED IN THE AMERICAN TOWER CONSTRUCTION

7.0 CONCRETE FORMWORK

- A. FORMS: SMOOTH AND FREE OF SURFACE IRREGULARITIES. UTILIZE FORM RELEASE AGENTS.
- B. CHAMFER: EXPOSED EDGES OF ALL TOWER FOUNDATIONS SHALL RECEIVE A 3/4" BY 3/4", 45 DEGREE CHAMFER. OTHER EXPOSED EDGES SHALL RECEIVE A TOOLED RADIUS FINISH.
- C. UPON COMPLETION, REMOVE ALL FORMS, INCLUDING THOSE CONCEALED OR BURIED
- D. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

8.0 CONCRETE REINFORMENT

REFER TO STRUCTURAL DRAWINGS FOR ALL REQUIREMENTS.

9.0 CAST-IN PLACE CONCRETE

FOR STRUCTURAL CONCRETE (FOOTINGS, FOUNDATIONS, ETC.), REFER TO STRUCTURAL DRAWINGS FOR REQUIREMENTS. FOR ANY MISCELLANEOUS CONCRETE, REFER TO SPECIFICATION BOOK OR OBTAIN REQUIREMENTS FROM CONSTRUCTION MANAGER.

- A. ALL CONCRETE SHALL COMPLY WITH ASTM C94 UNLESS NOTED OTHERWISE.
- B. MINIMUM COMPRESSIVE STRENGTH (F'C) AT 28 DAYS: 4000 PSI FOR TOWER FOUNDATION, AND 3500 PSI FOR ALL OTHER CONCRETE UNLESS SPECIFIED IN CONSTRUCTION DOCUMENTS.
- C. AIR ENTRAINMENT: PROVIDE 4 TO 8% AIR ENTRAINMENT FOR ALL CONCRETE SUBJECT TO FREEZE-THAW CYCLE.
- D. CONCRETE TESTING: ALL FOUNDATION CONCRETE SHALL BE TESTED BY AN INDEPENDENT TESTING AGENCY APPROVED BY THE CONSTRUCTION MANAGER. ALL STRUCTURAL TOWER FOUNDATION CONCRETE MUST BE TESTED. EQUIPMENT OR BUILDING PADS ARE NOT REQUIRED TO BE TESTED, UNLESS OTHERWISE NOTED BY CONSTRUCTION MANAGER. PROVIDE A MINIMUM OF 5 CYLINDERS (2-7-DAY, 2-28-DAY, 1-SPARE) FOR EACH DAYS POUR, OR FOR EVERY 50 YARDS PLACED - WHICHEVER IS GREATER. ADDITIONAL TESTS OR CYLINDERS MAY BE REQUIRED BY CONSTRUCTION MANAGER, A SLUMP, AIR, AND TEMPERATURE TEST SHALL BE PERFORMED FOR EACH SET OF CYLINDERS CAST. PREFERABLY, TESTS SHALL BE PERFORMED AT THE LOCATION OF ANCHOR BOLTS (PIERS - FOR MAT & PIERS, CAISSONS - TOP 1/3 OF CAISSON). TESTS SHALL ALSO BE REQUIRED FOR CONCRETE CONSIDERED BEING LESS THAN DESIRABLE BY CONCRETE SPECIFICATION STANDARDS. THE TESTING AGENCY HAS THE AUTHORITY TO NOT ACCEPT CONCRETE MEETING THESE SPECIFICATIONS FOR AMERICAN TOWER THE CONTRACTOR IS RESPONSIBLE FOR ANY CONCRETE NOT MEETING THESE STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE TESTING AGENCY A MINIMUM OF 24 HOURS IN ADVANCE OF EACH FOUNDATION POUR.
- E. VIBRATE ALL CONCRETE USING SUFFICIENT HIGH FREQUENCY, LOW AMPLITUDE MECHANICAL IMMERSION TYPE VIBRATORS. INSERTVIBRATORS IN CONCRETE AT REGULAR INTERVALS AND OVER ENTIRE SURFACE TO SOLIDLY FILL CONCRETE MECHANICAL IMMERSION TYPE VIBRATORS. INSERT VIBRATORS IN CONCRETE AT REGULAR INTERVALS AND OVER ENTIRE SURFACE TO SOLIDLY FILL CONCRETE AROUND AND BETWEEN REINFORCEMENT BARS AND INTO CORNERS AND IRREGULARITIES. VIBRATE THOROUGHLY THROUGH EACH LIFT TO THE PREVIOUS LIFT. REVIBRATION AS LATE AS THE RUNNING VIBRATOR WILL SINK THROUGH UPPER LAYERS OF ITS WFIGHT, IS RECOMMENDED, DISCONTINUE VIBRATION WHEN RISING ENTRAPPED AIR BUBBLES STOP BREAKING THE LEVELING SURFACE, DO NOT OVERVIBRATE AS THIS MAY CAUSE SEGREGATION.

F. FINISHING EXPOSED CONCRETE SURFACES:

- 1. THESE PROVISIONS APPLY TO ALL EXPOSED AND ALL FORMED CONCRETE, EXTERIOR OR INTERIOR, UNLESS SPECIFICALLY DETAILED OTHERWISE. PERFORM PROCEDURES PRIOR TO APPLICATION OF ANY CURING COMPOUNDS
- 2. ALL SURFACES: THOROUGHLY CLEAN OF ALL STAINS, SPATTER AND LOOSE MATERIAL.
- 3. FINS, RIDGES, HIGH SPOTS: HONE SMOOTH WITH ABRASIVE POWER GRINDERS WHILE CONCRETE IS GREEN, IMMEDIATELY AFTER FORM REMOVAL
- 4. FORM TIE HOLES AND DEEP DEPRESSIONS: FLUSH THOROUGHLY WITH CLEAN WATER AND TAMP TO OVERFULL WITH DRYPACK. CURE 10 DAYS AND HONE FLUSH AND SMOOTH.
- 5. ROCK POCKETS, HONEYCOMB, SAND STREAKS, DEBRIS AND VOIDS: CUT OUT AT LEAST 1 INCH DEEP WITH SIDES PERPENDICULAR TO SURFACE. FLUSH OUT WITH CLEAN WATER, COAT SURFACE WITH NEAT CEMENT PASTE AND TAMP TO OVERFULL WITH DRYPACK IN AT LEAST TWO LAYERS. CURE FOR 10 DAYS AND HONE FLUSHED AND

G. CONTRACTOR SHALL VERIFY ALL SIZES AND LOCATIONS OF ALL ELECTRICAL OPENINGS AND FOUIPMENT/BUILDING PADS WITH THE FLECTRICAL DRAWINGS AND SHOP DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL OPENINGS AND SLEEVES FOR PROPER DISTRIBUTION FOR ALL UTILITIES.

CONTRACTOR SHALL REFER TO DRAWINGS OF OTHER TRADES AND VENDOR DRAWINGS FOR EMBEDDED ITEMS AND RECESSES NOT SHOWN ON STRUCTURAL DRAWINGS

PRIOR TO POURING CONCRETE THE INDEPENDENT TESTING AGENCY SHALL INSPECT ALL FOUNDATION STEEL AND FOUNDATION SUBGRADE

10.0 STRUCTURAL STEEL

MEET OR EXCEED MANUFACTURER'S RECOMMENDATIONS.

- A. UNLESS OTHERWISE NOTED, ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315).
- B. ALL REINFORCING STEEL SHALL BE NEW BILLET STEEL, CONFORMING TO ASTM A-615, GRADE
- HEATING AND WELDING OF BARS IS PROHIBITED WITH THE EXCEPTION OF WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER.
- D. ALL REINFORCEMENT BARS TO BE FREE FROM LOOSE RUST AND
- UNLESS OTHERWISE NOTED, ALL REINFORCEMENT SHALL HAVE A MINIMUM CONCRETE COVERAGE OF 3 INCHES. THIS MAY REQUIRE SPACERS AND CHAIRS AS REQUIRED BY TESTING AGENCY OR
- SPLICES IN REINFORCEMENT STEEL ARE PROHIBITED, UNLESS APPROVED BY CONSTRUCTION MANAGER. ALL SPLICES MUST THEN MEET ALL APPLICABLE ASTM STANDARDS FOR SPLICING.

11.0 GROUNDING

MEET ALL APPLICABLE CODES, REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, AND AMERICAN TOWER CO. CONSTRUCTION SPECIFICATIONS



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AMERICAN TOWER

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